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A Lecture
ON
INTRA-THORACIC NEW GROWTHS.

Delivered in the Faculty of Medicine, University of Liverpool, on March 7th, 1908,

BY T. R. GLYNN, M.D. LOND., F.R.C.P. LOND.,
PROFESSOR OF MEDICINE, UNIVERSITY OF LIVERPOOL.

GENTLEMEN,—During my term of office at the Liverpool Royal Infirmary I find that I have had 23 cases of intra-thoracic growth under my care, on which post-mortem examinations have been held. I intend to-day to take these cases as a text for my lecture. They may be classified as follows:—

Hodgkin's disease with enlargement of the tracheo-bronchial glands	4 cases
Sarcoma of the glands in the axilla and neck with implication of the tracheo-bronchial glands	4 ,,
Primary sarcoma or lympho-sarcoma of the tracheo-bronchial glands	7 ,,
Primary cancer or sarcoma of the thymus	2 ,,
Primary cancer of the lung or bronchi	5 ,,
Myxo-sarcoma of the costal pleura	1 case

In the great majority—16 cases—the tracheo-bronchial glands were the seat of the new growth, and, in some of the cases of malignant disease of the lungs, these glands were so enlarged that the main symptoms were also those of mediastinal tumour. The same may be said of the symptoms in the case of sarcoma of the pleura. Therefore, while I treat of tumours of the mediastinum in the more systematic way I shall not limit myself to their consideration only.

The tracheo-bronchial glands are arranged in groups—namely, the right and left tracheo-bronchial group, the inter-bronchial, and the peri-bronchial groups, the latter a collection of small glands which follow the bronchi as far as their fourth division. It is to be noted that when these glands are the seat of new growth an intra-pulmonary tumour may be formed which projects as a conical mass into the lung and has the appearance of a primary pulmonary growth. The anastomoses of these groups of glands are numerous and explain the frequency of adenopathies consecutively to affections either of thoracic organs or of more distant parts. The different groups communicate freely with the deep cervical and posterior mediastinal glands and they receive lymphatics from the neck, thorax, trachea, bronchi, lungs, pleura, pericardium, and œsophagus. The lower cervical glands are therefore apt to become infected in malignant disease of the glands at the root of the lungs and were so in three of my cases. They were also involved in one case of malignant disease of the lung and one case of cancer of the thymus.

It is evident that a malignant infection originating in any gland of the tracheo-bronchial system is likely to extend from group to group. In such an event the glands, while greatly enlarged, may remain discrete or they may coalesce and form a mass, all likeness to their normal structure being lost. Marked tumefaction of any group of these glands is likely to lead to compression of the trachea or one or more bronchi. If the right tracheo-bronchial group is involved with bronchial constriction and there is also possibly compression of the superior vena cava, the early part of the aorta and the right pneumogastric nerve, the most striking symptom is passive congestion or œdema of the head, neck, and upper extremities. Compression of the vena azygos is probably one of the causes of pleural effusions. The veins, being the more yielding, more readily give under pressure than the arteries, but the innominate artery may be constricted and the radial pulses rendered dissimilar, and even the aorta may be affected in a similar way, aortic systolic murmurs being produced. Much swelling of the left tracheo-bronchial group is likely to involve the left pneumogastric and left recurrent nerves, the later portion of the aortic arch, and the pulmonary artery. Symptoms due to disturbed innervation of the vocal cords are likely to be a prominent feature in such a case. Tumefaction of the inter-bronchial group is likely to involve the pulmonary veins and lead to pleurisy and œdema of the lungs. Not infrequently the various groups of glands are all more or less involved and form a mass in which the trachea, one or both main bronchi, and the large vessels are buried. The morbid effects of malignant growths of glands are not limited to those due to pressure, for sometimes the neoplasm invades neighbouring tissues and organs, penetrating and migrating along the walls of bronchi, extending into the pleura, pericardium, or even, as in two of my cases, intruding into the walls of the heart. The tracheo-bronchial glands may be the seat of simple inflammation, adenitis, as a result of infection from inflammatory disorders of the lungs and air passages; they may also be the seat of tuberculous or syphilitic lesions. Glands so affected may be considerably enlarged, but rarely give rise to the symptoms of tumour. Malignant growths originating in the œsophagus, vertebra, breast, or sternum may lead to secondary disease of the glands or may invade the mediastinum, the pleura, or lungs by continuity. Abscesses or hydatid cysts may also involve the mediastinal glands, but these affections are so rare that they need not be further referred to. Tumours of the mediastinal glands may be primary or secondary. The primary are lymphomas, lympho-sarcomas, or sarcomas; the lymphomas being especially associated with Hodgkin's disease. The secondary tumours follow malignant disease of the lungs, or of some group of lymphatic glands, commonly of the cervical or axillary. Tumours of the lungs may also be primary or secondary. The primary growths, cancer and sarcoma, including the so-called endothelioma of the pleura, are very rare, while the secondary growths are common. The latter usually occur as small scattered nodules, and their presence can rarely be determined by physical examination, though the pulmonary symptoms presented by a victim of such an accident may be significant. Occasionally a secondary tumour of the lung may, as I show you in this drawing, form a considerable mass.

I shall now consider certain points relating to the pathology of mediastinal growths and emphasise them by referring to my cases, which for the most part were examples of neoplasms implicating the tracheo-bronchial glands.

[I here availed myself of coloured drawings of specimens obtained from my patients. The first drawing which I exhibited showed the appearance presented in a case of primary sarcoma of the tracheo-bronchial glands. The glands of every group were more or less implicated, so that the lower end of the trachea and both bronchi were surrounded; the right bronchus was much compressed and into the left bronchus a fungating mass of new growth projected from the orifice of a secondary bronchus, the walls of which for a short distance were invaded by new growth. The glands were for the most part discrete and one or two of those in the interbronchial space were equal in size to a small hen's egg. The neoplasm entered the spinal cord through an intervertebral foramen and caused paraplegia. Another drawing showed a tumour of about two inches in length and an inch and a half in thickness resting on the spinal cord and its membranes. I handed round at the same time drawings illustrating similar lesions of the spinal cord associated with malignant disease of the bronchial glands. In one the tumour was adherent to the anterior surface of the spinal canal and in the other the new growth was adherent to the cord and its membranes, along which it extended for about three inches. Similar invasion of the spinal canal causing paraplegia occurred in five of my cases of mediastinal growth. In another case of sarcoma of the axillary, cervical, and mediastinal glands associated with paraplegia the paralysis was due to slight caries of a vertebra and myelitis. Sometimes, as the drawings which I exhibited demonstrated, the appearance and general arrangement of the glands were lost; they were fused together into a mass of new growth which invaded the root of a lung. In one case the malignant mass involved nearly the whole of the lung. Another drawing showed a mass of new growth limited to the neighbourhood of the main bronchi, chiefly occupying the inter-bronchial space. One bronchus was slightly compressed only, but the other was surrounded and its walls invaded by and lost in the neoplasm. The canal of this bronchus was for its whole length nearly closed, but its subdivisions were not implicated nor the lung invaded. In the next drawing, on the other hand, the

new growth could be traced into the lung, having infiltrated the walls of bronchi of the second and third division; several infected peri-bronchial glands lay buried in the pulmonary tissue near these bronchi. When a bronchus becomes obstructed serious pathological changes are apt to be developed in the part of the lung with which it is physiologically related. Two of the drawings demonstrated that the lung beyond the obstructed bronchi was the seat of a broncho-pneumonia; small grey racemose patches were scattered throughout the pulmonary tissue. Another drawing exhibited a lung with a mass of primary cancer involving its root. The large bronchi were lost in the growth, the bronchial glands were only slightly swollen; the lower lobe of the lung was consolidated, grey, and in one part broken down and occupied by a large cavity, while the apex of the upper lobe was the seat of scattered broncho-pneumonic patches. These conditions were associated with an empyema. The next drawing was one of cancer implicating a bronchus—a form of pulmonary cancer. It occupied the typical site of such a growth—namely, the level of the secondary bronchi immediately below the bifurcation of the main bronchus. It filled this tube, infiltrated its walls, and projected into the large bronchus. The bronchi beyond were the seat of peri-bronchial suppuration and the pulmonary tissue was collapsed, partially solid from a broncho-pneumonia, pale, and airless. In a case of a similar description, under the care of a colleague, the lung beyond the cancerous bronchus was occupied by abscess cavities. The tracheo-bronchial glands were invaded by secondary growth and so enlarged as to cause characteristic symptoms of mediastinal tumour. In some cases of bronchial cancer the primary growth and the infected glands unite to form a mass in the hilum of the lung. Another drawing also depicts a cancer affecting a bronchus and occupying a precisely similar position; the walls of the secondary bronchus running to the apex of the right lung were thickened by new growth which extended into the tubes of the third division. The channels of the affected bronchi were narrowed but not closed; the lung beyond was fairly healthy, being only somewhat emphysematous; the lymphatic glands were infected, they equalled chestnuts in size, and surrounded the main bronchus and slightly compressed it. In a case where the small bronchi were involved by a new growth originating in the bronchial glands you could note that much of the upper part of the lung was black and gangrenous. In aneurysm of the aortic arch, a more common cause of bronchial compression, these secondary inflammatory affections of the lung are frequently met with. The next diagram showed a representation of the left lung obtained from a patient in whom an aneurysm compressed the left bronchus. The organ was almost solid, grey throughout, and the lower lobe broken down. I also exhibited another drawing as it illustrated another consequence of bronchial compression in a case of aneurysm; the lung was invaded in every part by miliary tubercle. The next drawing showed a mass of cancer situated in the lower lobe of the right lung. It was brain-like in appearance and of about the size of the palm of the hand; the centre of the mass was softening; this was a primary growth. I have met with a similar formation in the apex of the right lung. Another drawing conveyed some idea of the size and character of a tumour which filled the left cavity of the chest in a young woman. It was a myxo-sarcoma of the pleura and weighed 9 pounds; the new growth surrounded the lung and did not invade it or its pleura, but compressed it to the smallest possible dimensions. It extended at least two inches beyond the right side of the sternum and thrust the heart before it. Such tumours are very rare; I find only one similar case recorded in our post-mortem notes extending over 30 years.]

Pleuritic effusion frequently complicates intra-thoracic malignant growths and occurred in seven of my patients. The fluid was removed, but little or no relief was afforded by the operation. In five cases the fluid was sanguineous, and in one of these purulent as well; the latter was a case of primary cancer of the right bronchus. Effusion into the pleura is in the class of affections under consideration due to one of two causes: pressure on the pulmonary veins or vena azygos by enlarged glands, or the development of secondary growths on the pleura. In one case I found the pulmonary veins obstructed but there was no effusion. The absence of effusion may have been due to the fact that the pulmonary artery was found to be also compressed. The state of the azygos vein, however, was not noted. Investigation at the necropsies also showed that the fluid is not necessarily hæmorrhagic when the pleura is the seat of secondary malignant growths. In two of the cases with such deposits in the pleura simple serous effusion was found and in the subject of myxo-sarcoma of the pleura the fluid removed at the first aspiration was quite clear.

The cause.—Little or nothing can be said as to the cause of these growths. In none of my cases could any tendency to malignant disease be discovered in the families.

Sarcoma is generally met with in the earlier periods of life and cancer in the later. The average age of my patients with sarcoma commencing in some group of superficial glands or in the mediastinal glands was 36 years. Three were under 28 years of age. The average age of those with cancer of the bronchi or lung was 48 years, the youngest 38 and the oldest 67 years. A considerable proportion of the cases of Hodgkin's disease occur in young persons. The ages of my patients were 15, 16, and 22 years, and one was 34 years of age. It is, I believe, generally stated that mediastinal growths are more commonly met with in females than in males, but all my patients were males, three of the four patients with malignant disease of the lung were also males, and the victims of Hodgkin's were, as is generally the case, males. It is recognised that mechanical irritation may provoke the development of cancer. In three cases of pulmonary cancer the nature of the employment may have led to irritation of the lung tissue. One man was a stonemason, another was a bricklayer, and the third was a fireman. Two of my patients with sarcoma presented distinct lesions of syphilis.

The symptoms of growths or hypertrophy of the bronchial glands are largely due to pressure on, or invasion of, nerves, bronchi, vessels, and other structures in the mediastinum. As a rule the more extensive the tumour the more positive the symptoms. Pain is usually present. It may be absent but was certainly a definite symptom in nearly all my patients. The pain in most cases was neuralgic in character, described as shooting, burning, or stabbing, intermittent or more or less continuous with exacerbations. The seat of the suffering was the back and sides. In the remaining few cases the pain was described as aching. Occasionally pain was the earliest symptom; thus, in one man pain in the back and sides occurred three months before cough or dyspnœa developed.

Rendu states that an aching constrictive pain referred to the upper part of the chest behind the sternum generally precedes other symptoms. Pain of this character is certainly common in aneurysm of the aortic arch, but I can find no record of its existence in the cases under consideration. Pain in the chest may be due to pressure on the intercostal nerves in the costo-vertebral groove, or to the development of pleuritic inflammation or to more obscure causes. I have already referred to the frequency with which pleuritic effusion was met with in my patients. More or less inflammation of the pleura is likely to be associated with growths on or near the surface of the lung. Dry pleurisy with much pain occurred in two of my cases of primary cancer. I recently met with a case of secondary sarcoma of the upper part of the right lung in a female in whom agonising pain over the implicated area of the organ was experienced and was probably due to the same cause. Pain does not seem to be so invariably present in the enlargement of the glands due to lymphadenoma, as I find no mention of it as a symptom. In my five cases of Hodgkin's disease with hypertrophy of the bronchial glands one only of the patients complained of pain in the chest and that was due to the development of pleurisy.

Dyspnœa is frequently present when the tracheo-bronchial glands are enlarged or are the seat of growths and is due to one or more conditions, commonly to constriction of the lower end of the trachea or of one or both of the primary bronchi; or it may arise from implication of the pneumogastric or recurrent laryngeal nerves; or perhaps from pressure on one or more of the large blood-vessels or on the auricles; or, finally, the respiration may be embarrassed by changes in the lung succeeding bronchial obstruction; or by pleuritic effusion. It was sooner or later a pronounced symptom in my cases and increased in intensity as time went on. A constant difficulty of breathing was in some aggravated by paroxysms of dyspnœa. I have met with a case of intra-thoracic growth where such paroxysms were mistaken for

attacks of spasmodic asthma. In three of my patients with this affection dyspnœa was the earliest symptom. The victims of such tumours and those suffering from aneurysm of the thoracic aorta with constriction of the large air passages often assume strange postures, sitting up in bed day and night, bent forwards as far as possible, or even with head hanging over the side of the bed. Such were the attitudes assumed by several of my patients. In the case of the girl with the huge sarcoma of the left pleura the following note was taken two days before death: "She only dozes occasionally, throws herself into odd positions—is now curled up on her left side, with her head over the edge of the bed in an attempt to relieve dyspnœa." In a case of secondary sarcoma of the mediastinal glands, which I saw in the late Mr. Reginald Harrison's wards, tracheotomy was resorted to to avert death from laryngeal spasm.

In two of my cases of cancer of the lung dyspnœa was a prominent symptom. In one there was great enlargement of the bronchial glands and in the other widespread pneumonic destruction of the lung from bronchial occlusion.

Hoarseness is a common symptom in mediastinal tumours and arises from pressure on the pneumogastric or recurrent laryngeal nerves. In three of my patients there was more or less abductor paralysis of the left vocal cord with hoarseness and some stridor. In another the same symptoms were present but the state of the vocal cords is not noted. In one hoarseness was one of the first symptoms.

Cough, whether the bronchial glands or lungs are the seat of new growth, is present at some period. It may be paroxysmal or more or less constant, weak and toneless or clanging and noisy, as it is in some cases of aneurysm. In the cases where there was paralysis of a vocal cord it was necessarily weak and the deep inspiration after coughing was attended with stridor—a fact of great moment.

The quantity and character of the expectoration in bronchial compression vary exceedingly. In one or two of my patients in the early period of their illness the cough is described as "dry," in others simple mucus was ejected, and in two the mucus was streaked with blood. When bronchial or pulmonary troubles developed behind the obstruction the expectoration became purulent.

Three of the subjects of malignant disease of the lung suffered from hæmoptysis; in two it was quite an early symptom, but, as usual in this affection, it was never profuse. Compression of the œsophagus with difficulty in deglutition was not present in any of my cases. In one patient with mediastinal growth vomiting was an early symptom and was probably due to irritation of the pneumogastric nerve.

More or less pyrexia, as might be anticipated, was present in the subjects of Hodgkin's disease and in four of the cases of malignant disease of the lung and in seven of the cases of sarcoma of the bronchial glands at one time or another, the rise of temperature probably being due to intercurrent pleurisy or destructive changes of pulmonary tissue.

In nine cases there was some evidence of venous obstruction, in two œdema, and in two congestion of the face and upper extremities; in the others fulness of the jugulars or enlarged subcutaneous veins over the upper part of the chest. In four cases there was irregularity in the size of the pupils, and in one unilateral sweating from pressure on the sympathetic.

Constriction of a main bronchus by the pressure of enlarged glands or growth is likely to give rise to characteristic physical signs. An opportunity of studying the signs of such constriction at an early period and when it is inconsiderable is more often afforded in aneurysm than in mediastinal tumour. I believe that the very earliest indication of slight bronchial compression is lessening of the vocal fremitus; as the pressure of the aneurysm increases, the vocal resonance, respiratory murmur, and chest expansion diminish. These phenomena point to the advent of a series of morbid changes in the lung related to the affected bronchus, which may end in its destruction as I have already pointed out.

In mediastinal tumours the opportunity of following the march of pathological events is less frequently afforded. However, evidence of bronchial stenosis is sooner or later usually obtainable in the majority of these cases and similar morbid changes in the lung often follow; bronchitis is in turn succeeded by œdema, consolidation, softening, and excavation, and the course of these pathological events may be rendered apparent by physical examination, but the earliest evidence pointing to the advent of these secondary pulmonary changes is likely to be furnished by the thermometer.

The signs of bronchial constriction, lessened vocal fremitus, vocal resonance, and so forth, when found over the whole or lower part of one side of the chest, are equally characteristic of pleuritic effusion; the evidence furnished by percussion must be appealed to to distinguish the one from the other; and when the lower lobe of a lung has passed into a pneumonic condition the physical signs—absence of percussion resonance, vocal fremitus and resonance, and respiratory murmur—resemble those of massive pneumonia, a condition where exudation not only fills the air sacs but also the small bronchial tubes.

Occlusion of one of the smaller bronchial tubes is necessarily hardly capable of recognition on physical examination. In the case of a man with occlusion of a secondary bronchus running to the apex of the left lung by a cancerous growth originating at its junction with the main bronchus and leading to partial collapse, consolidation, and peri-bronchial suppuration, the physical signs were suggestive of tuberculous apical trouble; certainly with signs of consolidation there was an absence of vocal fremitus and resonance rather than an increase, but the diagnosis was only arrived at on the discovery of large hard glands at the root of the neck and of distended veins over the upper part of the chest. The physical signs characteristic of narrowing of a main bronchus were present in 10 out of the 15 cases of tumour of the tracheo-bronchial glands, in a case of cancer of a bronchus and cancer of the apex of a lung with metastasis to the bronchial glands, also in one of the cases of malignant disease originating in the neighbourhood of the thymus, where the growth had extended through the fissure of the right lung to its root. These signs were absent in two of the cases of sarcoma of the tracheo-bronchial glands as death occurred from paraplegia before the bronchi were seriously compressed. In two cases these signs were indefinite. One was a boy with Hodgkin's disease, general dropsy, ascites, pleuritic effusion and bronchitis, and in the other, also a case of Hodgkin's disease, both main bronchi were compressed to some extent; in another case the notes are incomplete.

Direct evidence of tumour at the root of the lungs in the shape of dulness on percussion in one or both interscapular regions or in the neighbourhood of the second and third right or left costal cartilage was noted in 12 of the cases. In the majority of these the respiratory sounds were feeble or absent over the dull area and in 4 bronchial.

Pleural effusion, to a greater or less extent, was present, as I have stated, in 7 cases; and the physical signs of such effusions tended to mask other signs and interfere with the results attained.

The heart's apex was displaced outwards from some cause other than by pleuritic effusion in three instances, the organ being sound, and in several there was marked epigastric pulsation, largely due to emphysema of a sound lung. In one of the patients with growth originating in the thymus and in two cases of tumour of the tracheo-bronchial glands aortic systolic murmurs were produced by compression of the aorta. In another case a systolic murmur developed over the tricuspid area and the pulmonary artery was found to be constricted in a malignant mass.

In the cases of malignant disease, probably originating in the thymus or its remains, the physical signs in many respects closely simulated those of aneurysm. In one there were some bulging of the lower part of the manubrium and obscure pulsation with aortic systolic murmur, impaired resonance continuous with the area of cardiac dulness, dilated jugulars, hoarseness due to paralysis of the left vocal cord, diminution in the size of the left pupil, weakness of the left radial pulse, and evidence of some constriction of the left bronchus. The contrary indications were the presence of a few large, hard, fixed glands at the root of the left side of the neck and of dulness in the interscapular regions—especially on the left. At the post-mortem examination a mass of growth was found beneath the sternum, lying over the aorta and pericardium and implicating the left lung. The glands at the root of the neck pressed on the left subclavian artery, while the glands at the root of the lungs were infected and greatly enlarged. In the other there was impaired resonance over the upper part of the sternum extending downwards to the

pericardium, the jugulars were distended, the eyelids were œdematous, there was contraction of the left pupil, and there was stridor. The evidence against aneurysm was the absence of pulsation and murmurs over the dull area and also of tracheal tugging. After death a growth was found lying over the pericardium and large vessels and extending as a thin layer into the fissure of the left lung as far as the large bronchi, but the bronchial glands were only slightly enlarged.

The symptoms and physical signs of the case of primary sarcoma of the left pleura in the early stage of the affection resembled those of pleurisy with effusion. There was a history of pain, breathlessness, and dry cough of three months' duration. The left side was absolutely dull throughout; the heart was somewhat displaced to the right. Respiratory sounds were absent excepting in the interscapular and left subclavian regions, where they were slightly bronchial; vocal resonance was also absent; the jugulars were slightly distended; respirations were 40 and the pulse was 120. There was hectic fever. On aspiration 46 ounces of clear fluid were obtained but no relief afforded. A week afterwards the aspirator was again used and a little blood only was withdrawn; a week or so later evidence of intra-thoracic pressure became positive, the heart was much more displaced, the jugulars more distended, superficial veins appeared over the chest, the left pupil was contracted, and the left radial pulse was smaller than the right. Further, the percussion dulness extended gradually across the upper part of the sternum to quite an inch beyond its right border and a systolic murmur developed at the base of the heart. There was never any enlargement of the left side of the chest but rather diminution. The opposite lung became more and more emphysematous, as indicated by gradual increasing depression of the liver.

Little need be said regarding the symptoms of cancer of the lungs. My cases are examples of two of the forms of this affection—cancer as it affects the bronchi and cancer as it occurs in a mass. Authorities describe a third—diffused variety. In three of the patients with pulmonary cancer—two affecting a bronchus and the other occurring as a mass in the apex of the right lung—the tracheo-bronchial glands were much involved in the disease and the chief symptoms were those of mediastinal tumour. In a woman in whom a large caseating cancerous growth was found in the upper lobe of the left lung the symptoms—occasional slight hæmoptysis and hectic—and the physical signs were those of pulmonary phthisis; and the same may be said of the clinical features of a cancerous tumour of the lung in a man where the mass occupied the lower lobe of the right lung, accompanied with empyema and hæmoptysis.

In secondary malignant disease of the lungs the diagnosis is greatly facilitated by the discovery of malignant disease in some other organ—the breast, uterus, liver, or rectum—or by the history of an operation for such disease, but in these cases of primary growth such assistance was not afforded.

The diagnosis of mediastinal tumour is often difficult. Sometimes a solitary symptom may serve to direct attention in the right direction; for example, there may be hoarseness, brassy cough, dyspnœa, stridor, irregularity of pupils, severe pain in the chest, congestion or œdema of the face and upper extremities, or dilatation of the superficial veins over the chest. But the tumour may be a growth or an aneurysm of the aortic arch, for the signs of intra-thoracic pressure occur in both affections. While, however, there are some signs common to both conditions there are others peculiar to each or more frequently met with in one than in the other. In aneurysm there may be more or less bulging, with expansile pulsation or obscure impulse in the neighbourhood of the upper part of the sternum, with single or double murmurs, diastolic shock, and tracheal tugging. A dull area, with absence of heart or breath sounds, the existence of enlarged glands in the lower part of the neck or elsewhere, or the history of an operation for such glands would be in favour of growth.

Passive congestion and œdema of the head, neck, and upper extremities and also pleural effusion are more common in growth than in aneurysm. Evidence of arterial degeneration, a history of syphilis or of conditions likely to cause excessive strain, would tell in favour of aneurysm; youth or the female sex in the direction of growth.

The prognosis is necessarily unfavourable but I have met with two cases where the symptoms warranted a diagnosis of mediastinal growth, which ran a much more favourable course than was anticipated. One of these patients was a gentleman in easy circumstances in whom symptoms of mediastinal tumour gradually developed and were pronounced when I saw him; his face and neck were swollen and congested, assuming a purplish hue on stooping, the superficial veins over the chest and shoulders were distended, and dyspnœa was urgent. There was evidence of some narrowing of the right bronchus and dulness on percussion to the right of the upper part of the sternum with no impulse, murmurs, or tracheal tugging. He remained pretty much in the same condition for three years, perhaps longer, for I lost sight of him. The other patient I saw with Dr. Randle Leigh. The symptoms in this case were very similar and just as emphatic. As there was a history of syphilis he was put on large doses of iodide of potassium and in a month or two perfectly recovered. We concluded that there was syphilitic infection of the tracheo-bronchial glands with the production of gummata, more particularly as there was dulness on percussion in the second and third right intercostal spaces near the sternum.

As to *treatment*, in the enlargement of the mediastinal glands associated with Hodgkin's disease arsenic in increasing doses is indicated. Unfortunately, in the cases referred to its administration was ineffectual and in the rare cases of syphilitic infection and swelling of these glands iodide of potassium should be given. With these exceptions treatment can only be palliative. Pain may be relieved and sleep procured by sedatives and dyspnœa alleviated by the hypodermic injection of atropine.

HUMAN TUBERCULOSIS AND CATTLE TUBERCULOSIS: INVESTIGATIONS AS REGARDS 97 NORWEGIAN FARMS.[1]

BY BIRGER OVERLAND, M.D.

AT our last meeting at Stenkjcer I promised that I would prepare a paper on my investigations with reference to the relative prevalence of human and cattle tuberculosis in my own district. Let me in the first place recapitulate some of the best known facts of what have been ascertained as to the relation between tuberculosis in man and in cattle.

Villemin, in 1865, established the communicability of tuberculosis, and later many observers conducted experiments with the view to transmiting tuberculosis to horses, calves, sheep, goats, swine, dogs, cats, guinea-pigs, rabbits, &c., and, in a certain case, to human beings, by means of inoculations, inhalations, or feeding experiments. These experimental investigations, in connexion with histological observations, had in a sense practically established the identity of tuberculosis when Koch in 1882 announced the discovery of the tubercle bacillus.

Subsequent bacteriological researches seemed to have removed the last doubt as to the identity and communicability of human and animal tuberculosis, although in reference to the identity of the two varieties Koch made some reservations as early as in his first publication on the etiology of tuberculosis, and in 1890 Mafucci pointed out a striking difference in the cultural qualities as well as in the virulence between the tubercle bacilli of poultry on one side and those of mammals on the other side.

In 1901 Koch made his dramatic pronouncement in London which seemed almost to throw the whole question again into the melting-pot. As the results of a series of experiments he felt justified in concluding that human tuberculosis is something other than cattle tuberculosis and cannot be transferred to the cattle, although he found it impossible to determine whether man is liable to bovine tuberculosis or not, because experimental investigations in the human species are not practicable. But, in his opinion, the infrequent occurrences of primary intestinal tuberculosis proved that the danger of contracting tuberculosis through the milk and meat of tuberculous cattle, as also through butter, was little or at all greater than that from directly inherited tuberculosis.

Professor P. Baumgarten was of the opinion that the

[1] A paper read before the Trondhjem county branch of the Norwegian Medical Association

experiments necessary to prove that man cannot be infected with the tubercle bacilli of cattle were as a fact performed about 25 years ago by a surgeon now deceased. Starting from the opinion expressed by Rokitansky that an antagonistic influence exists between cancer and tuberculosis, the said surgeon endeavoured as a cure to inoculate half a dozen of his patients suffering from inoperable generalised and malignant tumours with tuberculosis. He used cultures from tuberculous animals, and, notwithstanding great doses of these cultures being subcutaneously injected, neither local nor general tuberculosis was observed. Baumgarten therefore supports Koch in so far as he, as a rule, does not regard cattle tuberculosis as a danger to man, yet he will not deny the identity of human and bovine tuberculosis, which, on the contrary, he thinks established through, for instance, the identical reaction produced in tuberculous children by tuberculin prepared either from human or bovine sources.

In direct antagonism to these observers is von Behring, who has found that the human tubercle bacilli are but little detrimental to the cattle, while, on the other hand, he claims to have established by his experiments that the tuberculous virus of bovine origin is more virulent to all mammals—"also auch für den Mensch"—than the human virus. His opinion is that all infection with tuberculosis takes place in infancy mainly through milk from tuberculous cows.

These two mutually distinctive views have given rise to a special literature on the question. Professor D. J. Hamilton, in a lecture delivered in Manchester in 1902, strongly opposed Koch. One instance which Koch and Schütz regard as a doubtful one would, Professor Hamilton thinks, be viewed by other observers as a positive proof of infection through inhalation. Next he draws attention to several instances, pointed out by Arloing, regarding guinea-pigs, in which Koch and Schütz considered the result to be doubtful but which others would accept as evidence that the disease had been transferred.

De Jong has shown that bacilli originating with man and found in an infected bull had increased their virulence in their new host.

Pearson and Ravenel appear to have proved that bacilli from man inoculated on calves produce in the first instance only a local affection, but that when transferred from calf to calf they always increase their virulence until after five passages they give rise to a generalised tuberculosis. The negative results of Koch may therefore be attributed to the fact that the bacilli had not yet acclimatised themselves to their new host.

Against Baumgarten's negative results with tuberculous inoculations on cancer patients it has been urged that experiments on such heterogeneous tissue as that of cancer can prove nothing as regards healthy tissue.

De Jong, Delépine, Arloing, Bollinger, Klebs and Ravenel, Crookshank, Nocard, and others have carried out experiments the results of which differ from those of Koch and Schütz. Examples also have been reported, as, for instance, by Professor Bang of Copenhagen, of veterinary surgeons having been infected with tuberculosis from cattle. On the other side, the investigations of Kitasato in Japan may be regarded as inconsistent with the views of von Behring. For it is alleged that in that country the rate of mortality from tuberculosis is the same among children as among adults, although tuberculosis does not occur in the cattle. A similar claim has been made as regards the statement of Röhrdam as regards Greenland, where cattle are not found at all.

For the purpose of endeavouring to throw light upon these controversial questions the German as well as the British Government appointed special commissions. The leading features of the results of the German commission are as follows. Among the tubercle bacilli of mammals distinction must be drawn between a "typus humanus" and a "typus bovinus." From tuberculosis in cattle only bacilli of the "typus bovinus" were cultivated. With bacilli of "typus humanus" they did not succeed in producing progressive tuberculosis in cattle. In man bacilli of the "typus humanus" are mainly found. It is therefore to be inferred that man receives his tuberculosis directly or indirectly by transmission of tubercle bacilli from one person to another. But as bacilli of "typus bovinus" have been found in man, especially in children under eight years of age, it must be concluded that man may be infected through tuberculous meat or milk. The British commission sums up its results in somewhat positive propositions.[2] There can be no doubt that a certain number of instances of tuberculosis in man, especially in children, are due to infection by bacilli from bovine tuberculosis, and the infection in most of these cases takes place through the milk. Cows' milk which contains tubercle bacilli ("typus bovinus") is evidently a cause of fatal tuberculosis in man. Amongst the 60 examined cases of tuberculosis in man 14 were due to the "typus bovinus."

The result of the discussion at the congress on tuberculosis at Paris in 1905 as regards the relation between human and bovine tuberculosis is reported by Andvord in "Tidsskrift for den Norske Laegeforening," 1906, No. 2, thus: "The cattle tuberculosis is no doubt a disease which is transmissible to man, as also *vice versâ*. The tubercle bacillus of human tuberculosis, as well as of tuberculosis in cattle and other species of animals, must more particularly be regarded as varieties of one and the same species. As to the frequency with which tuberculosis in man is produced through infected milk or meat, or concerning the amount of importance which is to be attributed to this way of infection, opinions still differ."

Raw of Liverpool has reported his experiences from 4000 cases of pulmonary tuberculosis, 1500 cases of surgical tuberculosis, and 800 necropsies. His conclusions are as follows. 1. Human tuberculosis and cattle tuberculosis are different varieties of one and the same disease. 2. The human body is liable to both varieties. 3. Cattle tuberculosis is often transferred to man, both through articles of food and by contagion. 4. The two varieties are not coexisting in man.[3] 5. A mild attack of bovine tuberculosis produces immunity against pulmonary tuberculosis.

When the discussion was at its height after the pronouncements of Koch and von Behring it occurred to me to compare within my district the results of tuberculin tests on cattle with the number of cases of tuberculosis in the workpeople employed upon the same farms. I thought that if the two kinds of the disease were two different varieties, which could not be transferred from one species to another, the appearance per cent. of cattle tuberculosis would be the same, whether regard be had to the farms where no human tuberculosis could be found or to those where the disease was found amongst the workpeople. If, on the other hand, cattle tuberculosis was the predominant source of infection to man, it might be expected that human tuberculosis would in the main be found to be confined to the farms where there were reacting cows. Since the commencement of my investigations many researches have shown that cattle and man can mutually infect each other with their more or less heterogeneous bacilli. I therefore determined to ascertain if possible whether it is a rare or frequent occurrence on our Norwegian farms for cattle and man to infect each other. I am well aware that my investigations have but little value from a scientific standpoint, because the lacunæ are so many. It must be taken for granted that the tuberculin tests render it possible to determine whether tuberculosis exists in live stock or not. Similarly as regards tuberculosis in the occupants of the farms the same method should be employed—i.e., that of determining whether the tuberculin test produced a reaction. But for obvious reasons I have been content to visit the farms where the veterinary surgeon has previously tested the live stock in order to examine as closely as possible everything regarding deaths and previous illness and to inspect the people themselves. I have sifted the evidence so far as practicable, but it is not improbable that mistakes of diagnosis may have crept in. Mr. Angell, district physician, has been kind enough to give me a statement of the cases of tuberculosis treated by him when he was here. It has also been of service for me that I myself have practised in this district for eight years, thereby having gained an intimate knowledge of the sanitary conditions on the farms. It was tempting to execute the investigations over the whole district in order to get as great a number as possible and to reduce the importance of unavoidable errors to the lowest limits. I have, however, confined myself to the regions where I best know the conditions. When, therefore, I deal here with

[2] Reported from the summary of Professor Harbitz in the Norsk Magazin for Laegevidenskaben for May, 1907; *vide* also M. Geirsvold in Medicinsk Revue, 1907, p. 173.

[3] Bacilli of typus humanus and typus bovinus have in several instances been found to exist contemporaneously in man. Lydia Rabinowitsch has found both types coexisting in monkeys.

cases of tuberculosis I refer to cases which I have been able to verify either through correspondence or my own examination. I am aware that a great many latent cases of tuberculosis escape my statistics, and these cases may be supposed to be the causes of many inexplicable cases of cattle tuberculosis. When, after all, everybody has had some tuberculosis it remains difficult, if not impossible, always to explain the origin of new cases of the disease. Having in mind these difficulties I asked Mr. Morseth, the county veterinary surgeon, for the results of his tuberculin tests, which he most willingly gave me. I am greatly indebted to him both for these documents and for much recent information and good advice.

During my examinations I have used the following scheme of questions. 1. When was the live stock tested? 2. How many animals had you then? 3. How many of these reacted to tuberculin? 4. Have any instances of disease occurred among the occupants which may have been tuberculosis? If tuberculosis has been made out in the cattle the following questions are put. 5. Has the animal been bred on the farm, or has it been purchased, and, if so, how long ago? 6. How old is the reacting animal? 7. Have any of the milkmaids been tuberculous? 8. Have children drunk unboiled milk? 9. Has any child shown suspicious symptoms? In case of tuberculosis in the occupants the following are the questions asked. 10. Has the patient had anything to do with the cowhouse—when and for how long? 11. If he may have been infected through milk, were other sources of infection possible?

I have made up the results in four groups. I. Farms where no positive tuberculin test in the live stock has occurred, and where I have not been able to find cases of tuberculosis among the occupants. II. Farms with no positive tuberculin test in the live stock, but with cases of tuberculosis among the occupants. III. Farms with positive tuberculin test in the live stock but with no cases of tuberculosis among the occupants. IV. Farms with positive tuberculin test in the live stock and with cases of tuberculosis among the occupants. The following is a compendium of the information gained in these groups.

Group I.—This group includes 41 farms with 434 head of cattle in all.

Group II.—1. J. O. S. 13 animals tested on Nov. 13th, 1899; none reacted. In 1896 the family adopted a tuberculous boy from Trondhjem. In 1898 the farmer's wife suffered from osteomyelitis fibulæ and in 1902 a daughter, aged 26 years, contracted tuberculosis renis. 2. O. H. 10 animals tested on Nov. 21st, 1900; none reacted. 23 years ago a tuberculous woman had lived at the farm for one year. 3. M. M. 15 animals tested on Nov. 26th, 1900; none reacted. The farmer's wife died from pulmonary phthisis 23 years ago. She had now and then worked in the cowhouse. 4. H. H. 12 animals tested on Nov. 21st, 1900; none reacted. A sister-in-law of the farmer suffering from pulmonary tuberculosis had lived at the farm and had died there 14 years ago. 5. J. P. S. Five animals tested on Nov. 1st, 1900; none reacted. The farmer's wife had died in 1888, aged 34 years, from florid phthisis. 6. H. H. 13 animals tested on Feb. 28th, 1897; none reacted. The farmer's wife had died in 1899, at about 50 years of age, from pulmonary consumption. She had now and then worked in the cowhouse. 7. St. Five animals tested on Jan. 13th, 1898; none reacted. A child, aged two and a half years, had died at the farm 15 years ago from bronchitis which had lasted for half a year. The farmer's wife had had seven years ago a tumour glandulosus colli, which had dwindled away after treatment by arsenic for six months. 8. P. P. S. 11 animals tested on Nov. 12th, 1900; none reacted. A son of the farmer had died from pulmonary consumption in 1894, aged 24 years. Another son, aged 31 years, had died from pulmonary consumption in 1896. 9. P. Si. Nine animals tested on May 7th, 1897; none reacted. A daughter had died from phthisis in 1898, aged 25 years. She had for some time lived away from home with a tuberculous maid; she did not partake in the work in the cowhouse. One of her brothers had died from phthisis in 1899. Another daughter, seven years old, had had tuberculosis in 1899 and 1900. 10. N. M. Seven animals tested on May 19th, 1896; none reacted. In 1898 a daughter had died from phthisis, after some years of sickness, at the age of 17 years. 11. L. Three animals tested on Feb. 18th, 1896; none reacted. In 1885 an adult son had died from tuberculosis. 12. G. N. 13 animals tested on May 19th, 1896; none reacted. In 1892 the farmer's wife had died from phthisis, aged 57 years. A son had died in 1888 from the same disease and another son in 1894. Besides these there have, during the same time, died from phthisis three cousins who lived at the farm. 13. E. T. 16 animals tested on March 31st, 1897; none reacted. 14 animals tested on May 6th, 1903; none reacted. In 1894 a son had come back from America suffering from phthisis; he had died in 1895. A daughter, aged 20 years, had died in 1899 from consumption, having been ill for one and a half years. (Perhaps No. 13 ought to belong to Group IV., because a cow which had fallen ill in 1904 had to be killed and "the whole lung was all pus." But as no veterinary surgeon saw the case the farm is classified in this group.) 14. G. F. 14 animals tested on Nov. 4th, 1901; none reacted. The farmer had died in 1890 from phthisis. One of his daughters had died at another farm one year after marriage from the same disease. 15. O. L. Six animals tested on May 6th, 1903; none reacted. At this farm there have died from phthisis: (1) a woman who was lodging there; (2) the mistress of the farm, in 1881, aged 39 years; (3) a son, in 1885, aged 18 years; (4) a son, in 1887, ten months old (?); and (5) the farmer himself, in 1891, 53 years old. A milkmaid had lived at the farm for one year some 20 years ago and had died a short time afterwards from phthisis. 16. H. N. 11 animals tested on April 20th, 1896; none reacted. On this farm there had died: (1) a son in 1889, aged 92 years, from phthisis; (2) a daughter in 1895, 26 years old; (3) the farmer himself in 1900, aged 67 years; and (4) a daughter in 1904, 14 years old. 17. J. G. 11 animals tested on Dec. 18th, 1900; none reacted. During the last 20 years there had died from phthisis five children, the eldest of whom was a daughter, aged 16 years. 18. K. B. Four animals tested on Dec. 19th, 1905; none reacted. Two children had died during the spring of 1904, aged two and four years respectively, from tuberculous meningitis. During the summer of 1905 the farmer developed pleurisy. 19. H. B. Eight animals tested on Dec. 19th, 1906; none reacted. In 1905 a son had died from pulmonary tuberculosis and in 1906 a daughter from tuberculous peritonitis. 20. J. T. S. Eight animals tested on Nov. 31st, 1899; none reacted. In 1906 a daughter contracted pleurisy and now she has tuberculous peritonitis. 21. O. H. S. Seven animals tested on Jan. 18th, 1898; none reacted. The farmer's wife was said to have suffered some years ago from an apical affection. I have myself several times attended to her for conjunctivitis phlyctenularis. In 1903 a son died from spondylitis and pulmonary tuberculosis. Another son, five years old, suffered in 1905 from arthrocace manus and very protracted diarrhœa. 22. H. K. 18 animals tested on May 23rd, 1898; none reacted. From 1891 to 1904 there was a servant boy on the farm who in 1898 was treated for an affection of one apex and now he is on the point of death from phthisis.

Group III.—1. O. H. Of six animals tested on Jan. 30th, 1896, one reacted (14 years old). No case of tuberculosis had occurred among the occupants. There was a daughter, aged 25 years, on the farm. (This case might as well have been classified in Group IV., the reacting cow coming from a farm where several members of the family had died from tuberculosis.) 2. Kr. S. 23 animals tested on Dec. 24th, 1898; one reacted (four years old). The cow which reacted had been born on the farm. No manifest tuberculosis among the occupants. A daughter, 20 years old. 3. J. O. St. 10 animals tested on Nov. 1st, 1900; one reacted (seven years old) which had been brought in the preceding year from non-tested live stock. No manifest tuberculosis among the occupants. No children on the farm. 4. W. R. 24 animals tested on Nov. 3rd, 1899; one reacted (two years old) which had been born on the farm. No manifest tuberculosis among the occupants. Four children (adults). 5. Tl. H. 13 animals tested on Dec. 4th, 1896; one reacted (eight and a half years old), a cow which had been born on the farm. No manifest tuberculosis among the occupants. One adult daughter. 6. J. N. 12 animals tested on Nov. 17th, 1902; one reacted (five years old). The reacting cow had been bought in Sweden when it was a calf. No manifest tuberculosis among the occupants. Four children, the ages of whom ranged from five to 19 years. 7. P. A. H. Seven animals tested on Dec. 1st, 1901; one reacted (seven years old). The cow which reacted had been tested in 1897, as also had the other animals, without giving reaction. No manifest tuberculosis among the occupants. In 1901 this family had a child, one year old, to whom they gave unboiled milk; this child was always healthy, as were also some younger ones. 8. J. P. H. 10 animals tested on Nov. 19th, 1900; one reacted (11 years old) which had been born on the farm. No manifest tuberculosis among the occupants. Two children, aged 15 and 17 years respectively. 9. Bj. Y. 17 animals tested on Nov. 5th, 1900; one reacted (six years old) which had been born on the farm. No manifest tuberculosis among the occupants. No children. 10. O. N. 16 animals tested on March 26th, 1897; one reacted (four years old) which had been born on the farm; the live stock was tested once more in 1901, when there was no reaction. No manifest tuberculosis among the occupants. A child, one year old, had been dry-nursed with unboiled milk in 1897; this child, as also several young children, had always been healthy. 11. O. R. 39 animals tested on June 9th, 1900; four reacted (age and origin unknown). No manifest tuberculosis among the occupants. Four adult children. 12. E. H. 16 animals tested on Nov. 19th, 1900; one reacted (five years old) which had been born on the farm. No manifest tuberculosis among the occupants. In 1900 there were no children on the farm. 13. O. B. 14 animals tested on June 22nd, 1897; one reacted (eight years old) born on the farm. No manifest tuberculosis in the occupants. No children in 1897.

Group IV.—1. P. A. E. Three animals tested on Dec. 19th, 1901; one reacted (10 years old), born on the farm. In 1897 a son returned home, after several years of absence, having tuberculosis; he died. In 1898 a daughter, aged 20 years, contracted phthisis. Another son, aged 23 years, is healthy. 2. J. B. L. Six animals tested on Oct. 28th, 1900; one reacted (three years old), born on the farm. The farmer died in 1890 from pulmonary tuberculosis at the age of 65 years. 3. R. E. Five animals tested on Oct. 28th, 1900; one reacted (seven years old) which had one year previously come from the farm just mentioned (No. 2). The farmer had died in 1896, 42 years old, from pleurisy. There were in 1900 five children on the farm, their ages ranging from six to 16 years, all of whom had taken unboiled milk from the age of six months onward but who had never shown any suspicious symptoms. No children dead. 4. M. E. 10 animals tested on Oct. 28th, 1900; two reacted (four and five years respectively), both born on the farm. A shepherd girl who also in winter assisted in the cowhouse, after two years' service contracted tuberculosis in 1897 and died at her home in 1898. Previously there had been no tuberculosis in her family, but after her death some instances have occurred in her brothers and sisters. M. E. has no children. 5. A. S. 23 animals tested on Nov. 1st, 1897; two reacted (seven and 10 years old respectively). 19 animals tested on Nov. 28th, 1900; one reacted (six years old). The three reacting cows had been born on the farm. In 1903 a son, aged 18 years, contracted a mortally ending phthisis. In 1905 a milkmaid belonging to a healthy family caught the same disease; several children, whose ages now range from three to 12 years, have drunk unboiled milk since the age of one year in each case; they have all of them blepharitis and somewhat enlarged submaxillary glands. 6. O. T. 18 animals tested on March 31st, 1897; two reacted (seven and 10 years old respectively). 16 animals tested on May 6th, 1903; two reacted (seven and 10 years old respectively). Three of the cows which had reacted had been born on the farm, while the fourth had been purchased out of an untested herd. In 1889 a servant boy, 17 years old, had died from phthisis on the farm. A daughter, aged 18 years, had stayed at Reknæs sanatorium for tuberculosis in 1898, her illness dating from 1895. She is the only child. 7. O. M. Eight animals tested on Nov. 15th, 1895; one reacted (seven years old). The cow was born on the farm. In 1895 a son, aged 25 years, died from phthisis; in 1896 another son, aged 22 years, died, and a third one, aged 19 years; there were no younger children. 8. F. M. 17 animals tested on Nov. 15th, 1895; two reacted (eight and 10 years old)

and both had been born on the farm. A son, aged 35 years, died in 1883 from tuberculosis, having been ill for three and a half years; an elder brother was healthy. 9. K. B. 11 animals tested on Dec. 9th, 1902; two reacted (two and nine years old respectively), one of which had been born on the farm, while the other one had been purchased out of an untested herd. Two children, two and four years old respectively, had undoubtedly tuberculous affections in 1903; they had drunk unboiled milk since the age of one year. Previously there had been no tuberculosis on the farm. 10. P. P. H. 10 animals tested on Nov. 19th, 1900. One reacted (eight years old) which had been purchased out of an untested herd when it was a calf. A son of the farmer had returned from America in 1886 infected with phthisis and had died six months after his return. The farmer's wife had died from phthisis in 1900, having been ill for eight or nine years; she had worked a little in the cowhouse; the children were all grown up and over 20 years of age. 11. O. N. V. 22 animals tested on March 26th, 1900. Seven reacted (three, four, five, five, seven, and eight years old respectively); the stock originally belonged to two farms now put together (V. and H.), 11 from each. On V. manifest tuberculosis had never been found, while on H. three grown-up children, at ages ranging from 20 to 27 years, had died from this disease during the years 1884–86; in the animals from H. no reaction occurred, while seven of the animals coming from V. gave reaction. All these, however, had stood in the cowhouse of H. from 1893 to 1898. The ages of the children ranged from four to 20 years; they were all healthy. 12. L. Y. 25 animals tested on Nov. 5th, 1900; two reacted (eight and 13 years old respectively), one of which had been born on the farm, while the other had been purchased when it was a heifer from farm No. 19 in this group. The farmer's mother had died in 1874 at the age of 54 years from phthisis, having been ill for several years. There were no children. 13. A. M. 30 animals tested on March 22nd, 1897; none reacted. 19 animals tested on Feb. 20th, 1903; two reacted (one and a half and 10 years old respectively), both of which had been born on the farm. In 1888 a son had died from tuberculosis at the age of 12 years; in 1895 another son had died from "tuberculosis of the stomach" at the age of 16 years; in 1899 a third son had died from pulmonary consumption in his twentieth year; in 1900 a daughter had died from phthisis at the age of 17 years; in 1903 the farmer himself had died from pulmonary tuberculosis and meningitis; and in 1906 a fourth son had died from pulmonary tuberculosis at the age of 27 years. 14. P. E. 20 animals tested on May 7th, 1897; one calf reacted (one year old) which had been born on the farm. The occupants had always been healthy. From July 7th to Oct. 7th, 1896, a woman from Trondhjem suffering from pulmonary tuberculosis had lived on the farm. Remnants of her food had been given to the calf, and her bed-straw had been put into the calf's hutch. 15. L. E. 11 animals tested on Dec. 22nd, 1900; one reacted (four years old) which had been tested also in the summer of the same year, but then with a negative result. In July of the same year a tuberculous engineer had lived at the farm; he was now and then in the cowhouse. The family had children of all ages from one year to 25 years, all of them without suspicious affections. 16. M. K. 12 animals tested on Feb. 5th, 1903; one reacted (three years old) which had been purchased out of an untested herd when it was a calf. In 1900–01 the farmer's wife had suffered from pulmonary tuberculosis and at that time she was in the habit of assisting a little in the cowhouse. 17. J. H. 24 animals tested on Feb. 28th, 1897; one reacted (two years old). 12 animals tested on Jan. 1st, 1901; none reacted. The reacting animal had been born on the farm. It had been given milk from a cow which was very thin and which the farmer, in spite of several endeavours, never succeeded in getting into good condition. It was ill and had been killed before the test took place. Some 16 years previously a family with an adult tuberculous daughter had lodged at the farm. She was very often in the cowhouse. In 1892 a son, a servant boy, and a milkmaid had had, according to report, "mucus on the lungs" (bronchitis ?), and were ill for six months. In 1898 a daughter, 15 years old, had had pleurisy. 18. S. G. Eight animals tested on Nov. 12th, 1900; one reacted (eight years old) which had been born on the farm. In 1900 there were six children at ages ranging from one to 19 years. From the age of six months onwards each had taken milk unboiled. All were healthy except a boy 12 years old, who always had been delicate; last winter he had had pleuritis exsudativa which by the medical attendant has been considered "very suspicious." 19. O. G. 18 animals tested on Dec. 12th, 1906; one reacted (ten years old) which had been born on the farm. A boy, 14 years old, had contracted an apex affection in February, 1905, which was cured, but was followed by spondylitis cervicalis, from which he died in the autumn of the same year. During the preceding summer a mower suffering from phthisis had come to the farm and had died there. 20. P. F. 17 animals tested on Feb. 12th, 1901; none reacted. 17 animals tested on March 30th, 1906; three reacted (six, 12, and 17 years old respectively). The three reacting cows had been born on the farm and they had given no reaction in 1901. In 1900 a new tenant with his family had come to the farm and had stayed there for three years, and a brother of this tenant who had served at the farm in 1901 died in 1903 from phthisis. One of the tenant's daughters died in 1904 from multiple tuberculosis, no signs of which had appeared previously to the moving of the family. The owner of the farm had seven children at ages ranging from seven to 20 years. There had been no deaths. The two youngest children had always had poor appetites, had been thin, and had often "caught cold" and had slight rises of temperature. Some enlarged glands of the neck. All the elder children had been sound and healthy. 21. Kr. F. 13 animals tested on Jan. 18th, 1898, two reacted (two and seven years old respectively). The elder animal had been purchased some years previously out of a herd which had not been tested, while the younger one had been born on the farm. A daughter of the farmer had had, it was said, "commencing pulmonary consumption" 20 years ago.

My material, as will be seen, has been procured from 97 farms with in all 1157 tested head of cattle. The data may be grouped as follows. Group I.: 41 farms, 434 animals. Group II.: 22 farms, 222 animals. Group III.: 13 farms, 201 animals (16 reacted). Group IV.: 21 farms, 300 animals (35 reacted). Then, of 1157 animals 51 gave a positive tuberculin reaction, i.e. 4·4 per cent. Of the 522 animals on farms where also tuberculosis among the occupants had occurred 35, or 6·7 per cent., reacted. Of the 635 animals on farms where no tuberculosis among the occupants could be traced only 16, or 2·5 per cent., gave reaction. In the 43 herds on farms where tuberculosis in persons could be pointed out reaction was obtained in 21 of them, i.e. 48·8 per cent. In the 54 herds on farms where no tuberculosis in man could be traced reaction was obtained only in 13 of them, i.e. 24·0 per cent. Tuberculosis in *man* was traceable through inquiry or examination on 43 farms out of 97, i.e. 44·3 per cent. Of the 34 farms where the cattle test gave positive reaction tuberculosis in persons was also found on 21, i.e. 61·7 per cent. Tuberculosis in man was only traceable on 22 farms out of the 63 where no reacting animals were found, i.e. 34·9 per cent.

If anything may be inferred from such limited numbers and from investigations where necropsies as well as tuberculin tests of the living persons are wanting it must be: *tuberculosis in man and tuberculosis in cattle have a certain relation to each other*, as reaction in cattle on farms where human tuberculosis has been traceable occurs nearly three times as frequently as on farms where this disease was not found.

The next question arising is, Does man infect cattle or does cattle infect man, or can they both infect each other? Of course, this question is more difficult to answer. But we shall try to draw some conclusions from the different groups and the different cases. From Group I. no information can be obtained on this point. Group II. shows that tuberculosis may, and does, occur rather often among the occupants of the farm, although the cattle are not infected. Even the persons tending the cattle may be tuberculous without infecting the latter. As to this point I refer to Nos. 1, 3, 5, 6, 12, 13, 15, 16, and 21, especially Nos. 12, 15, and 16, which must be considered veritable pesthouses; in fact, it was found necessary to demolish the farm mentioned under No. 12. This group also shows that infants, even more of them in one and the same family, may become scrofulous and tuberculous although the milk cannot be taken as the baneful substance I point to Nos. 7, 18, and 21. In the same group are also found some cases of peritonitis, *vide* Nos. 19 and 20. Group III. shows, on the contrary, that the cattle may have tuberculosis, and yet we are not always certain to find symptoms of it in the work-people. Indeed, we find several instances where children have drunk unboiled milk from the stocks without being infected—e.g., Nos. 6, 7, and 10. The same fact is also found in some cases of Group IV.—e.g., Nos. 3 and 15.

In connexion herewith I may recall the communication made by Jörgen Thesen of Aas Agricultural School,[3] in which he mentions the fact that among 31 children constantly drinking unboiled milk from very tuberculous cows "not a single case of disease or death that could be in any way connected with tuberculosis has occurred during 43 years." While, according to their nature, Groups II. and III. can only furnish negative information, Group IV. is the only one from which positive proofs may be expected. Unfortunately circumstances are also here, as a rule, so complicated or vague that proofs are difficult to find. At all events, it should first have been ascertained, whether bacilli only of "typus humanus" were found on the different farms or whether the tuberculous person and the tuberculous cow had each their own type of bacillus. Also in this respect my comparisons suffer from the essential defect that microscopical examinations have not been performed.

Group IV. contains, as will be seen, entries under 21 instances of tuberculosis both in man and in cattle. It is, however, quite impossible to form any notion as to which is the infecting agent. I point to No. 4, in which a girl, formerly healthy and of a healthy family, became a milk-maid on a farm where previously no tuberculosis has been recognised; she contracts tuberculosis, returns to her home, and dies one year later. At her home two of the other children are infected from her and they subsequently die. On the farm where she was a milkmaid the live stock was examined two years after her death and two of the cows (four and five years old respectively) react. In this case it might be concluded that the girl contracted the disease at some other place—e.g., at school, and afterwards infected the cattle. But the contrary of this might also be possible. The case would perhaps appear a little plainer if it were known that the cattle had been examined with a negative result before the girl had come to the farm.

[3] Tidsskrift for den Norske Lægeforening, 1902.

Then it would have been more probable, although not proven, that the girl had brought the infection to the cattle. Such a case we have, in my opinion, in No. 20 in this group. The cattle there were tested in 1901 with a negative result. About that time a new tenant came to the farm, and in his family some cases of tuberculosis occurred after he had moved from the farm again. When the cows were tested once more in 1906 three of the animals which had been tested in 1901 reacted. The fact that in this case also some of the farmer's own children exhibited suspicious symptoms may be due to infection from the cowhouse, but also—and that is perhaps more likely—from the persons who afterwards died, with whom they had played together.

In connexion herewith I may say that in my opinion I have not been able to furnish any proof either in one or the other direction. But if after this exact record was made of all cases of tuberculosis in the examined districts, and if the tuberculin tests were repeated at relatively short intervals and the comparisons continued for years, I imagine that proof might be procured. My material contains so few repeated tests that, in that respect, they are of little use.

Besides No. 20 in Group IV. some of the cases appear to indicate that the tuberculosis has been conveyed from the dwelling to the cowhouse. In No. 1 a son returns home as a patient, having stayed for several years first at Trondhjem, afterwards at Christiania, and infects his sister who is tending the cattle. Two years later a cow gives reaction. With regard to No. 14 there had formerly been no tuberculosis on the farm. In the summer of 1896 a tuberculous woman from Trondhjem comes to reside at the farm. The remnants of her food and her bed straw were put into a calf hutch. During the following summer reaction occurred in this calf, but in none of the other animals. A little more doubtful is No. 15, where a cow has been infected between the summer and the winter of 1900. In the interval a male tuberculous lodger arrived at the farm who only occasionally paid short visits to the cowhouse.

Besides the particular cases here mentioned the conditions at Meraker also favour the belief that cattle are infected with tuberculosis from man. Before I separately discuss the Meraker affairs, however, we shall see if anything may be found which supports the theory that cattle tuberculosis infects man. In many cases it is difficult, even impossible, to make out where the cow has contracted its tuberculosis, yet it is, of course, much more difficult to find the source of infection to the human individuals who do not confine themselves to the tents but freely are in motion among so many contingencies of infection.

I have already mentioned a few instances suggesting the possibility that tuberculous patients had been infected from the cattle of the farm but that the probability of human infection was greater. The only case where I have not been able to trace out any other source of infection is No. 9 (Group IV.), in which case two small children had tuberculous affections on a farm where two cows in the preceding year had proved tuberculous but had been kept in the cowhouse and had been milked with the other cows. Both children recovered, however, a fact which possibly might favour the belief frequently maintained that bovine bacilli are less virulent to man,

I proceed now to discuss Meraker district separately. The country district Meraker, separately examined, might *a priori* be supposed to furnish reliable data, as it up to some 20 years ago was relatively isolated. The railway was not opened till about 1885 and no highway led through the district. During the latest generation it has been a strongly marked centre of tuberculosis—whole families have died and farms have had to be demolished. From the statements of various members of the population I got the impression that phthisis certainly had also occurred here formerly but that it began to be excessive during the years between 1880 and 1890. I have the impression that the tuberculosis had been brought to a majority of the farms by railway workmen who had tuberculous individuals in their families. At places where such workmen had lived mere pesthouses were formed. To some of the farms the disease was brought by tuberculous patients from Trondhjem who went to live at the farms. I have made a control trial, indicated by E. Stöven, of my theory and the trial has proved the correctness of it, the rate of mortality since the construction of the railway having undergone marked relative increase in persons aged between 15 and 40 years.

What conditions prevail as regards tuberculosis in cattle? It might be supposed that the undoubted rise of tuberculous cases during the last 20 years was due to infected live stock. On the other side, it might be expected, provided the cattle were very liable to infection with bacilli of human tuberculosis, that also a widespread cattle tuberculosis would be found in Meraker. In this district 19 herds have been tested, giving in my four groups the following results: Group I., 12 with 111 animals; Group II., four with 34 animals; Group III., one with 6 animals (one reacted); and Group IV., two with 25 animals (three reacted). Included in these are Nos. 10, 11, 12, and 16 in Group II., No. 1 in Group III., and Nos. 7 and 8 in Group IV. Of the 176 animals tested in Meraker four gave reaction—i.e., 2·3 per cent. On farms where no tuberculosis was found in the occupants only one animal reacted out of 117—i.e., 0·9 per cent. On farms where tuberculosis was found in the occupants three animals out of 59 gave reaction—i.e., 5·0 per cent. Positive reaction occurred in 15·8 per cent. of all the farms. Reaction occurred in 7·7 per cent. of farms with no tuberculosis in the occupants, and in 33·3 per cent. of those where tuberculosis also was found in man. Human tuberculosis existed in 66·7 per cent. of the farms where the tests gave a positive reaction in the cattle. Here, too, are the same conditions: reaction is more frequent on farms where human tuberculosis has been pointed out. It is to be remembered that No. 1 in Group III. perhaps ought to have been classed in Group IV. because the reacting cow had come from a well-marked tuberculous farm, where, however, the live stock had not been tested. *The result concerning Meraker is that where tuberculosis in the cattle does not exist, there is found less tuberculosis in the occupants of the farm.* On the other hand, also in Meraker there is found well-marked tuberculosis in farms—e.g., Nos. 12 and 16 in Group II.—with no reacting cow.

It is striking, too, that the percentage of the reactions in the tested cows is smaller for such a clearly-marked district of tuberculosis than it is for the whole country. The causes of this fact may be various. I shall mention some contingencies. It is not a long time since tuberculosis became so marked in the district; perhaps the virus needs some time to acclimatise itself for its hosts of another species. Or it may be because the cattle of Meraker live for a greater period in the open air; they are let out early in the spring, sometimes when the snow is still covering the earth. In the summer they are upon the mountains. Perhaps such a stay in the open air makes them immune against the virus; or, again, because during the winter the same cattle are only given natural straw forage and no artificial, milk-forcing substitutes. There is no dairy and the prices of milk have not tempted anybody to turn the milking-power to the utmost account. Therefore, foraging at the stable during the summer is quite unknown. It can hardly be denied that each of these factors is of importance. Mr. Haugan, dairy manager, has reported similar conditions of contrast between human and cattle tuberculosis from a mountain district near Röros. Here tuberculosis in man prevailed, according to his opinion, on account of the bad domiciles and improper nutrition, but tuberculosis in the cattle was very rare, in his opinion because the cattle lived in the mountains during the summer and in winter were given almost nothing but hay.

In finally trying to solve the second question which I have set up my answer must be as follows. Many circumstances favour the belief that animals and man can infect each other with tuberculosis, but in Stjövdalen (the examined district) the fact seems to be that cattle are more frequently infected by man than *vice versâ*. And I cannot deny that after my investigations the idea has occurred to me that man may have originally infected the cattle, and afterwards the latter made return by sometimes infecting man? It appears to me as if, for instance, the results from Meraker prove that tuberculosis comes originally to a district with the residents. Also in the literature of the question I find many things giving countenance to the same notion. Calmette says in his lecture before the fifth international congress on tuberculosis at the Hague, 1906: "In mammals only those living in captivity or kept as domestic animals are spontaneously infected. Monkeys, lions, tigers, hyenas, and jackals only contract tuberculosis when in menageries. Tuberculosis in wild pigs or wild cattle has hardly been observed, whereas tuberculosis in domesticated pigs and cattle is frequent. The

same will apply to dogs and cats. Therefore the fact evidently is that man and cattle must be regarded as the seat of the tubercular virus, but the 'humanus' and 'bovinus' type have no doubt a common origin, and their difference is but relative. Nobody now doubts that the human tubercle bacillus is less virulent to cattle than to man, and *vice versâ*. But everybody seems also to be agreed that, on the other hand, the human tubercle bacilli do not spare herbivoras and ruminants." Calmette therefore considers tuberculosis in man and tuberculosis in cattle as two different breeds of the mammal variety. That the tuberculosis in cattle cannot be the origin of tuberculosis in man seems to be evident from the communications above mentioned of Kitasato (Japan) and Röhrdam (Greenland).

Concerning the difference between bacilli of "typus humanus" and "typus bovinus" the German commission says, however, that a transition-form between these different varieties could not be obtained, even when, e.g., "typus humanus" was inoculated into cattle, goats, or rabbits. But the British commission declares that the difference between the bacilli in their first and second group is rather small, and "besides transitive forms are not rarely met with." In their third group are classed bacilli the virulence of which changed, so that by transmission of the bacilli from one animal to another an increased virulence was observed, whereas the virulence decreased on transferring the bacilli to cultures. This is also in conformity with the report of Professor Hamilton in his lecture in Manchester: "It is undoubtedly proven that bacilli from man can cause tuberculosis in cattle, and also that they increase their virulence on successive passages till they at last have almost the same virulence as the cattle bacillus, and with such proofs in view it seems impossible to make other conclusions than this: there is but a difference in degree between the two types." Finally, Hueppe has found that the difference between the two varieties of the bacilli is so small that when they have passed through guinea-pigs it is impossible to distinguish one from another.

Concerning the question as to the relation between human and bovine tuberculosis there are many contradictory views. But about this point all seem to be agreed: that our live stock in the country ought to be tuberculin-tested more than has been the case before we feed our children with unboiled milk. Whether infection through milk takes place often or seldom the danger is present and should be encountered with all the means of defence which are at hand. For the great point is the health of the rising generation.

Meraker, near Trondhjem, Norway.

THE TREATMENT OF APPENDIX ABSCESS.

BY ARCHIBALD W. CUFF, B.A., M.B., B.C. CANTAB., F.R.C.S. ENG.,
SURGEON TO THE ROYAL INFIRMARY, SHEFFIELD.

IT would seem, judging from the number of papers dealing with the subject of appendix abscess which have appeared during the last 12 months, that there is yet considerable interest displayed in, and disagreement as to the nature and amount of, the treatment required for this condition. We find some authorities advising the routine removal of the appendix when dealing with the abscess, whilst others argue strongly against this procedure, and would in the majority of cases limit their interference at first to opening and draining the collection of pus. Even the necessity of removing the appendix at all in the vast number of these cases is denied by some few surgeons. The stage at which the abscess should be attacked and the site for the attack are also in dispute. While some would operate as soon as the diagnosis of pus is made others advise waiting for it to become localised by adhesions. Of those surgeons making use of the abdominal route, some give their preference to a median incision, others selecting a lateral one. Opening pelvic abscesses through the vagina or rectum is a method which has ardent supporters. All are, however, agreed that the presence of pus as a complication of appendicitis is a very serious menace to the life of the patient. None can say at first what the course of events will be, whether the process will spread and acute peritonitis result, or will become hemmed in by adhesions, localised, and in this way its danger lessened. But even if the latter event does take place the risks to the life of the patient are still great. The abscess may burst into the general peritoneal cavity, and a most serious state of affairs be set up, the cavity being flooded with the most virulent poison and diffuse peritonitis assured. Again, the possessor of an abscess has always the risk of toxæmia and heart failure to fear, while now and then the dangerous conditions of subphrenic abscess, septic venous thrombosis, or pyæmia are met with.

Although now and then the abscess empties itself by bursting into the bowel, and more rarely still a cure results, such a method of cure must not be expected or waited for. We have no means of determining which cases will end in this way, nor is this spontaneous drainage by any means always satisfactory with regard to the position or size of the opening. A more serious condition is set up if the abscess discharges into the bladder. All these considerations would urge us to relieve this condition at some period, and logically this should be as early as possible. Only if it could be shown that such early interference was accompanied by risks to the patient which distinctly outweighed the good which would be done would it be wise to wait until the later periods of the disease. This proof of the ill-effects of early operation I am sure cannot be given. It is infinitely less dangerous, more easy, and more satisfactory to deal with these conditions in their early stages, than to wait for the chance of greater localisation. The larger the abscess the greater the time that the patient has been exposed to risk, his life has been in jeopardy, and after operation the longer will be the convalescence. Theoretically, in dealing with a collection of pus free in the peritoneal cavity, with no adhesions helping to wall it off, there might be the likelihood of spreading it to unsoiled coils of intestine and other parts of the cavity, so increasing the peritonitis and toxic absorption; but actually in practice with the exercise of but moderate care and caution this is certainly not the case. This brings us to another debateable point. Should we always endeavour to remove the appendix at the same time that we open and drain the abscess? I am strongly of opinion that this should always be done without there are very grave contra-indications. If it be granted that a simultaneous appendicectomy should be performed then there cannot be two opinions as to which is the easier—its performance before or after the formation of adhesions in which now and then the greatest difficulty may be met with in identifying the appendix. There is, however, a great difference of opinion on the subject of this primary appendicectomy. Some few surgeons content themselves with draining the abscess and not doing anything further unless indications arise in the future. There is no doubt that in many cases in which the abscess has been merely drained and the appendix left there is never again any further trouble which could be ascribed to its presence. Sir F. Treves[1] estimates the percentage of those patients who will afterwards suffer from recurrent attacks of appendicitis as 17 per cent., and the risk to life in these is considerably diminished. But can we say in which case it will be safe to leave the appendix and in which it would be far the best policy to remove it. I think in the majority of these cases we cannot prophesy with the slightest certainty of being right. The most radical surgeon will now and then for various reasons have found himself compelled to leave the appendix behind and in some of these will have been worried by the unsatisfactory after-course, the recurring abscesses, the long-enduring sinus or even fistula, and the recurrence at various times of attacks of appendicitis, which even if the danger is not great will alarm and annoy the patient. The general consensus of opinion is to-day that the appendix should be removed, but several writers strongly advise that this removal should be done at a second operation, a few days after the patient has recovered from the primary operation and the abscess wound has healed. The reason given for this advice is that the primary removal is difficult and adds distinctly to the gravity of the drainage operation. This assertion I strongly doubt. Among the disadvantages of leaving the appendix even for a time is the unpleasant way in which in many of these cases a sinus, or even a fistula, is left which only heals up after a long and wearisome time, two months being a very moderate estimate. Sir F. Treves has stated

[1] Brit. Med. Jour., March, 1905, p. 457.

that about 40 per cent. of patients who have trouble after mere drainage have been the subjects of sinus. Then, again, there is no doubt that the wounds in these cases heal less kindly, sloughing, often in considerable extent, is not uncommon, hence a large and weak scar is likely to be the result. Then, I think we should not leave out of account the risks, though these may be minute, which a second operation subjects the patient to, whether from the operation itself or from the anæsthetic, and, finally, we should bear in mind that a second operation is no slight ordeal both to body and mind of a patient who has just been through a painful and perhaps exhausting illness. In view of these considerations again I would urge the advisability of always removing the appendix at the first operation whenever feasible, and this will rarely not be the case. Now and then occasions will occur when uncommon difficulties to removal will present themselves or the serious condition of the patient, almost dead from toxæmia, will demand the minimum of interference and the prudent surgeon will deem discretion to be the better part of valour.

The question of the advisability of attempting to open these abscesses through the vagina or rectum will only interest those who believe in a secondary appendicectomy. That large pelvic abscesses can be opened satisfactorily through the vagina I am well aware from an experience gained by dealing with those due to tubal disease in this way, but with small abscesses it is not by any means an easy task, and with those high up in the pelvis it may be distinctly dangerous. The possibility of pus gravitating up to the diaphragm and a subphrenic abscess resulting, when elevating the pelvis of the patient in performing this operation, is not by any means a chimera. I have had one such case and this experience with the comparatively mild tubal abscess is quite sufficient to make me shy at attempting the same procedure in the more virulent appendix ones. Of opening abscesses through the rectum I have had no experience, but I should think the operation not by any means free from danger, and the possibility of efficient drainage uncertain. One advocate of the method, whose zeal would seem to be based on a slender and unsatisfactory experience, admits in one case opening the bladder by accident. Again, it is by no means rare during an abdominal operation to find together with a pelvic abscess one or more abscesses perfectly distinct from this, which a rectal or vaginal incision would not with any certainty drain. In one of my patients, after opening an abscess about the appendix, a second in every way distinct was found in the pelvis and yet a third up under the liver.

Based partly on the foregoing facts, I would suggest that the operative treatment of appendix abscess should conform as much as possible to the following propositions. The abdominal route should be chosen in all cases. The incision should be so placed as to allow of the easiest access to the origin of the mischief, and it should be so large and so capable of extension that any conditions likely to be found may be dealt with easily and thoroughly. Ease of manipulation means quickness of operation and this quickness is essential in dealing with these half-poisoned patients. A second operation should not be necessary if it can possibly be avoided, hence the appendix should always be removed at the same time. There should be as little mutilation as is compatible with thoroughness, two incisions not being made when one properly placed at first will do all that is necessary. Drainage-tubes, both in size and number, should be reduced to a minimum. The abdomen should not present the appearance of a target stuck full of arrows as in the illustrations of some suggested procedures. It should always be borne in mind that tubes leave very weak places in the scar, as well as being liable to injure the peritoneum, and so predispose to intestinal obstruction from the formation of adhesions with the bowels. Injury to the nerve-supply and to muscular fibres should be avoided when possible, and the wound and its resulting scar should be placed in as strong a part of the abdominal wall as is compatible with the foregoing requirements. It has been with a view to fulfil as much as possible the above propositions that I have shaped my operative procedures during the last three or four years, and these together with the no less important after-treatment and nursing have given very satisfactory results as I shall now endeavour to show.

During the last three and a half years there have been under my care in hospital practice 76 cases of intraperitoneal pus due to the appendix. I have selected this period for two reasons, one being that it is within the time during which the methods have been practically uniform and the other that the operation register from which the names in the first instance were extracted started on the first day of 1905. Hospital patients only have been selected because it is well known that the most unfavourable cases, those which have often been the subject of considerable delay before applying for treatment, are included in the hospital class. Of these 76 patients 68 had abscesses of every size and position while eight had diffuse peritonitis. It is somewhat difficult to define the terms abscess and diffuse peritonitis, particularly when adhesions are not present, and writers seem to have very varying conceptions of what constitute these conditions. Clinically I have considered as abscesses those collections of pus of whatever size they might be which might be considered to have a uniform surface and did not penetrate between coils of intestines, in which indeed the greater part of their boundaries are formed by abdominal parietes and only a comparatively small part by the intestines. Diffuse peritonitis, on the other hand, would be characterised by a purulent or sero-purulent fluid often in considerable amount, free in the peritoneal cavity, and lying between the coils of intestines, and visible in many a nook and cranny. The amount of the cavity involved would be considerable, generally at least the lower half of the abdomen. The term general peritonitis is perhaps better avoided, for it would be very difficult in any case except at necropsy to prove that the peritoneum as a whole was involved.

The above are only rough working definitions and undoubtedly have exceptions. Of the eight cases of diffuse peritonitis four recovered and four died—a mortality of 50 per cent. Of the latter one, a young girl, in whom I had left the appendix, recovered from the peritonitis but died three weeks after from an intractable fæcal fistula and a horribly sloughing wound, an object lesson on the subject of leaving the appendix. Of those who recovered the following is interesting from the severity of the conditions present. The patient, a maid servant, aged 28 years, was admitted to hospital with the provisional diagnosis of a ruptured gastric ulcer. As she was in a state of collapse when admitted only a portion of the following history could be got from the girl, who spoke in a low, scarcely perceptible, voice. She had suffered from slight indigestion for some time, had vomited infrequently, had had slight exacerbations of pain in the "stomach" now and then. Six days before admission she had had a severe attack of pain in the abdomen, had vomited, and had had to go to bed. Then things improved, the pain had in great part gone; she got up and did her work. 11 hours before admission she was again seized with excruciating pain and had vomited. A medical man was sent for who from the history had with every justification diagnosed a rupture of an ulcer of the stomach. When admitted to hospital she was collapsed, with subnormal temperature and small rapid running pulse. The abdomen was slightly distended but everywhere rigid and as hard as a board. Although the greatest tenderness and rigidity were in the lower part of the abdomen, and this might be thought to suggest appendicitis, I came to the conclusion, especially in view of the history of indigestion, that there probably had been an ulcer which had ruptured. The presence of the greatest tenderness in the lower part of the abdomen is by no means uncommon in the case of rupture of both gastric and duodenal ulcers, and is due to the irritating stomach contents quickly gravitating towards the pelvis. An incision in the epigastric region revealed an abdomen full of a purulent fluid, which welled up from every direction, and as far as we could see bathed every organ. A rapid examination of the stomach and the character of the pus quickly showed us that the stomach was not at fault, and the cæcum pulled up brought with it a gangrenous appendix with such a collection of lymph adhesions as showed that the condition was due to the secondary rupture into the peritoneal cavity of an appendix abscess. The appendix was removed through a low lateral incision, which afterwards served to transmit a pelvic drain, two other tubes were inserted, the abdomen was flushed out with saline solution, and the abdominal wall was repaired as much as possible. This case together with a later fatal one were the last two cases in which I employed flushing the abdomen. An intravenous infusion was also done during the time of operation. The patient rewarded us for our care with a perfect recovery.

Another patient who recovered was seized with the

symptoms of acute intestinal obstruction on the fifth day, but fortunately an immediate laparotomy through an abdomen which was still very septic, and the liberation of the gut which was adherent to the place where the pelvic drain had touched, saved our patient. It is very remarkable how rapidly the symptoms of obstruction can arise in these cases of adhesions due to operation for abdominal conditions. A patient can be reduced to a state of collapse in a very short time from the onset of the symptoms, and the trouble requires rapid and active intervention if life is to be preserved.

In the 68 cases of abscess which were operated upon there were but two deaths, a mortality of a trifle less than 3 per cent. This is comparable with the most favourable results yet published and is considerably better than the 11 per cent. mortality in those cases given by Battle[2] as the conjoint result of the operations at Guy's, St. George's, and the Middlesex hospitals where, of 381 similar cases, 44 deaths took place. In a series of 100 cases of hospital patients which had been under his own care Battle records a mortality of 10 per cent.

The following description of the extent of the mischief in three consecutive cases, taken at random from my notebook, represents very fairly the average type of case in my series. 1. A boy, aged 11 years, three days before admission was struck by a cricket ball over the right iliac region. This was quickly followed by great pain, vomiting, fever, and rapid pulse, and the general signs of appendicitis. A gangrenous appendix was found and a small abscess containing little more than an ounce of pus was opened. Recovery. 2. A man, aged 22 years, had been ill for a fortnight, and under a medical man for a week, with pain, vomiting, and obstinate constipation. The temperature was 102° F. and the pulse-rate 106 on admission. A large abscess extending from the iliac fossa to the under surface of the liver was opened. "Pus appeared to be coming from the region of the lesser sac." No pus was found in the pelvis. Recovery ensued. One drainage-tube only was used, being passed upwards to the under surface of the liver. 3. The patient, a female, aged 25 years, had been ill for two days with vomiting, pain, rigors, pain on micturition but not on defæcation. She had had no previous attacks. The temperature was 102° F. and the pulse 120 on admission. She was very tender per rectum. A large pelvic and iliac abscess was found. She was in hospital more than six weeks. Recovery followed. In all the above the appendix was removed at the operation. Of the two deaths, one was a strong man, aged 35 years, with a large pelvic abscess similar to the one above described; it was not walled in in any way and was drained and the appendix removed. With the exception that he was very blue and cold I saw no reason to expect anything but recovery. However, he never pulled round, peritonitis progressed, vomiting was constant, and he died on the fifth day. The second death was due to acute intestinal obstruction. After the first fortnight slight symptoms of obstruction were observed and were met by enemata, but some days afterwards his friends insisted on taking him home, with the result that 48 hours after he was brought back moribund and died in spite of all measures. It is possible that had he remained timely operation would have saved him. The abscess wound had quite healed. Of the 68 cases there were 20 female and 48 male patients. 11 were children of 12 years and under. The oldest patient was a woman 70 years of age and the youngest a girl aged three years. The great majority of the children had pelvic abscesses, and it is imperative always carefully to examine the pelvis of a child, both per rectum and during the operation, by passing a small Keith's tube into it. It is astonishing with what rapidity an abscess will form in a child. I have seen a small boy who had gone to school in perfect health, and had been seized there with pain and vomiting, operated upon 11 hours afterwards, and a large pelvic abscess found. Most of the children who are seized with acute appendicitis give the history of having had slight intestinal trouble for some time. This fact has had attention drawn to it by Broca. The ease with which children will collapse under abdominal trouble is well known. The following case of the little three-year-old girl is interesting from the severity of the condition and the youth of the child. Having been ill for five days, she was sent to us in a state of collapse. The temperature was 100·4° F., the pulse was 140, and the respirations were 40. The child's face was blue, she was almost unconscious, the abdomen was distended, and a large abscess extended up to the umbilicus and down into the pelvis. There were numerous moist râles in both lungs. The abscess was opened and appendicectomy was performed. Saline infusions were administered every four hours by the rectum and numerous turpentine enemata, as many as five on one day, given in attempts to reduce the great distension of the abdomen present. Calomel by the mouth in small doses was also given when the child could be got to swallow. On the second day, the pulse being almost imperceptible and 130 in rate, an intravenous infusion of eight ounces of saline solution was given. The distension remained alarming and the child almost unconscious for four or five days. Physostigmine, gr. 1-150th and 1-100th was given on the third, fourth, and fifth days, and seemed to do good in reducing the distension. The child slowly improved and left the hospital well. She was seen in perfect health a short time ago. Two cases of appendicitis during pregnancy were observed, and another girl, a few days after operation becoming very restless with headache and then drowsy, proved to be passing through an irregular attack of typhoid fever, a marked Widal reaction being present. In only four patients out of the 68 was the appendix left and the abscesses merely drained. In three the reason for this step was the serious toxæmic condition of the patient and the presence of dense adhesions, which I recognised from experience would take considerable time to deal with. The fourth case I much regretted leaving. The patient was a woman with an abscess of some size under the liver surface, the gall-bladder forming part of the boundary. I had thought that this abscess was due to perforation of the gall-bladder, and my incision was made high up to deal with this. The diagnosis was wrong, and as I did not wish to make a second incision I left the appendix which was imbedded in dense adhesions at the bottom of the abscess cavity. I was rewarded for my want of boldness by a sinus which lasted for nearly a year.

In no case in which I have set out deliberately to find the appendix have I failed to remove it (this does not necessarily mean that I shall always have this fortune) either by starting from the tip, or reversely working from the base outwards, or in more difficult cases peeling it as it were from out of the peritoneal coat. It is surprising how with a little practice the fingers can palpate and localise a portion to make a beginning of the enucleation on. Only in the desperately ill patients would I leave the appendix severely alone, for appendicectomy demands from 25 to 30 minutes for its performance in these cases, and time is an important consideration in such. This routine removal is not the practice of many authorities. In the 381 cases from the London hospitals already quoted the appendix was left in 185, although Battle remarks when quoting this, "The complications during the after treatment, as remarked by Messrs. Boyd and Paget in their summary, were much more frequent when the appendix was not removed." The same writer removed the appendix as a primary operation in only 13 of his 100 cases and says: "My own opinion is that it should not be removed as a routine practice." He advises its removal at a second operation after the first wound has healed.

It is impossible to lay down rules, certainly definite ones, as to when to operate in appendicitis, which shall apply to every case seen in practice. Undoubtedly the presence of pus calls for immediate operation, but it is easier to say this than to be sure when this occasion has arrived. Practically when a case with moderately severe symptoms has not improved in 36 hours pus is most probably forming; if 48 hours have passed without improvement then pus is nearly always present. In the minority of cases the finding of an acutely inflamed appendix and no pus outside it will only be the exceptions that will justify the rule. Cases which commence with slight pain and little variation of temperature and pulse-rate from the normal often wobble about for weeks and then may subside or be ended by operation. On the other hand, very acute cases starting with alarming symptoms, severe pain, rapidly rising pulse-rate, and progressing abdominal rigidity may quickly be followed by the presence of free pus in the peritoneal cavity. Especially is this likely to be the case in young children. Of the signs which may be relied on to

[2] Battle: Appendix Abscess, Practitioner, December, 1907.

point to the severity of a case, an increasing pulse-rate is the most important. The temperature may be lower, the patient say he is a little better, or at any rate no worse, but the pulse is going up steadily, then be sure that there is danger. Next to this sign in importance, if not equal to it, is a progressing abdominal rigidity and decreasing movement of the abdominal wall. A dry furred tongue, dry both on the dorsum and at the edges, is a sign that things are not going well, whether before or after operation. In this connexion the dry tongue of a mouth-breather awaking from sleep must be discounted. I have recently seen a patient in consultation in whom we found a large pelvic abscess, the temperature and pulse-rate being little different from "normal." Only the dry brown tongue, the facial expression, considerable rigidity of the abdomen, and great tenderness on rectal examination pointed to the gravity of his condition. The temperature is of slight import in making a diagnosis and is not of much value if appraised by its variations from normal without reference to other signs in giving a prognosis. How often does the patient with a large collection of pus in the abdomen, with a high temperature and flushed red face, never give rise to any anxiety after operation, while he with a low temperature, a pallid or cyanosed face, and it may be a small collection of pus will have a desperate struggle for life. Rigors are not uncommon in appendicitis, if the facts as told by the patient or his friends are reliable. Once I had the experience of seeing a rigor in such a patient, and this and his facial expression made me advise immediate operation. This was done and I removed a sac-like appendix, with thin distended walls full of the most foul fluid, like a mixture of blood and pus. I have noticed the same in several others which had a history of rigors, and I have thought, too, that the vessels of the appendix were in part thrombosed, at any rate they have not bled when torn across. Rigors occur with pus, too, but more often, I think, without pus, though my experience is too small to be absolutely sure. A consideration of the attitude and aspect of the patients is of the greatest value in both prognosis and diagnosis. It would be very difficult to put down in black and white all the little details, the odds and ends of attitude and facial expression which allow the experienced watcher to say of one patient, lying quietly in bed and with nothing remarkable on the temperature chart, he is really very bad, and of another vomiting slightly, with rises of temperature, and abdominal discomfort, he will do all right, and find these prognostications come true. But everyone who has seen a number of these cases knows that this can in a great measure be done. A nurse whom I know, who has had hundreds of these cases pass through her hands, possesses this power to a greater degree than any medical man I have met. Only constant watching and experience will give this insight.

With regard to the operative measures which I believe will assure the maximum good results the following details may prove of interest. The first essential is celerity; everything should be ready before the patient is under the anæsthetic to carry out the operation from start to finish. The average complete operation takes half an hour for its performance. The skin should have been prepared beforehand; only in case of great urgency should this be done during the process of anæsthesia. The incision that I invariably use is the one through the outer part of the sheath of the right rectus muscle. The gridiron incision results in too much risk of sepsis in muscle planes, besides giving too limited an operative field; it is only suitable for clean cases. Some surgeons advocate a median incision between the recti, but through such every appendix is difficult of removal, and in some cases it may be quite impossible. The bladder, too, in children especially, is liable to be in the way; and finally, a septic wound in this position is much more likely to have a weak yielding scar and to lead to a bad hernia. If it becomes necessary to deal with structures in the pelvis the lateral rectus incision can always be sufficiently enlarged, in the first place, by extending the lower part of the wound through the anterior layer of the muscle sheath in an oblique or transverse direction; this allows of considerable retraction of the muscle. Finally, in case of necessity, the muscle can be cut across, but in practice this is rarely required. Unsoiled intestine and the general peritoneal cavity must then be cut off from the abscess as much as possible by careful packing. I am accustomed to use a full-sized roll of plain sterile gauze; more is not usually required. It should be tucked at first well up under the liver, then across towards the mid-abdomen, and finally down towards the pelvis. If the latter is free from pus I pack this too. Then the gentle insinuation of the fingers under the parts in the neighbourhood of the cæcum will liberate the pus. This should be mopped up with pieces of gauze and the patient rolled over on to his right side, especially if the abscess is a large one, the wound edges during this procedure being protected as much as possible with gauze. Then the appendix is found and freed, generally easily, sometimes after difficulties that only experience will teach how to overcome. It is removed in quite the ordinary way, but especial care should be taken that the stump is well buried, either with its own peritoneum or else invaginated in the cæcum. As the swollen and inflamed peritoneum is very soft and tears with ease, this is often a matter of some difficulty to manage neatly. Drainage has next to be considered. In small abscesses one tube provided with a gauze inner wick and of about the thickness of a moderate-sized penholder will be sufficient if passed down to the appendix region. If there has only been a very small collection no tube need be used and the wound can be closed tightly up. But this is a method I do not care about, for though the peritoneum will go on all right there is some risk of suppuration in the muscular part of the wound, and a small tube, which may be withdrawn in a couple of days, will not materially hinder the healing. In large iliac and pelvic abscesses a tube of suitable size must be passed down into the pelvis and openings cut in its side to drain the upper parts of the track. Only in a large pelvic abscess, with a large upward extension, or *vice versâ*, would two tubes be used coming out in the angles of the wound. In diffuse peritonitis two tubes at least will be wanted; one, a large one, had better be put into the pelvis through a median incision. Washing out an abscess cavity should never be done. Having placed the drain tube and withdrawn the gauze packing the wound should be tightly sewn up around the drain tube in layers. I use an uninterrupted suture of catgut for the peritoneum and interrupted ones of catgut and silkworm gut for the fascial layers and skin respectively. This suturing of the wound, not leaving it practically open with large drainage tubes and gauze plugs, has, I am convinced, reduced weakness of the scar and herniæ after these operations to very small proportions. The difference between the large number seen five or six years ago and the one or two seen yearly now proves, I think, this contention. During the last 12 months I have operated upon but two such herniæ, one of my own, a girl who had had a large pelvic abscess, and a woman who had had some kidney operation done in another town. The stitches hold well in the majority of cases; only in the minority do more than one or two give way on the third or fourth day and come away, and in these the wound edges generally keep pretty well in apposition at that time.

The important question of the after-treatment may be considered under the heads of position of the patient, the administration of rectal injections, enemata, aperients, feeding, the care of the tube, and complications. In the first place the patient is laid on his back or towards the right side. The head of the bed is raised on blocks of wood. These are of varying heights, those of about 9 or 12 inches high being used for moderately severe cases, higher ones of about 18 inches for cases of diffuse peritonitis. Attention to keep the patient from slowly slipping down the bed will be required in the very high ones. The height of the blocks is gradually reduced, but the patient is kept elevated until there is little or no discharge from the wound and until the abdominal distension has gone and the bowels are acting satisfactorily. The use of blocks is, I feel sure, more satisfactory and more comfortable for the patient than attempting to prop him up with a bed rest. Saline injections into the rectum are given every four hours, oftener at first if the patient's state is very bad, as a routine treatment in all cases, and it is continued until the patient is practically free from sepsis and is well out of the wood. Of all single methods of treatment I believe it is the most efficacious and has saved innumerable lives since it was first introduced as a routine measure by Ochsner, Murphy, and Mayo Robson. We do not in hospital often use the continuous rectal infusion advocated by Murphy and Moynihan. It has seemed to us to be more difficult of application as far as satisfactory working is concerned than the giving of three- or four-hourly infusions, the nursing with it is more difficult,

and the discomfort to the patient greater. This is in part due, I think, to the restlessness and general intolerance to pain or discomfort of the hospital patient. In private, dealing with patients who as a rule have their feelings better under control, the continuous saline infusion is more successful. A pint of saline solution every four hours during the first 24 hours is an amount which many patients will retain. Young patients retain the injections well as a rule; old ones are less tolerant. The infusion, for it is not really an injection, is given with a catheter, short indiarubber tube, and glass funnel. It is commenced in the ordinary run of cases as soon as the patient is sufficiently out of the anæsthesia to be able to control himself, sooner if the condition is very bad. Five or six hours after operation an enema containing an ounce of turpentine is given. This should be as far removed from the time of giving a saline infusion as possible. It is repeated daily, or three or four are given during any one day if much distension of the abdomen or discomfort is present. They are continued so long as is thought necessary. Children, of course, take much smaller amounts of turpentine. Calomel in doses of gr. ½ or gr. 1 is commenced, as a rule, 12 hours after operation, sooner in some cases. It is given every one, two, or three hours according to the severity of the case, until, as a rule, four or five grains have been taken. This course of calomel may have to be repeated for several or many days if the patient's condition is unsatisfactory. A smaller dose—gr. ¼ every hour—often seems to be more efficacious than larger ones to reduce distension and produce an action of the bowels. In some cases where the distension is slight, but the fear of intestinal obstruction through the adhesion of bowel to some raw surface in the abdomen is entertained, the giving of calomel in very small doses—gr. ⅛th every few hours—will keep the bowels gently moving and possibly prevent firm adhesions. When the calomel on any one day has been pushed to the amount thought desirable, sulphate of magnesium in drachm doses every four hours may be given; sometimes this is not retained satisfactorily, often only the first dose makes the patient sick, at other times it seems to produce so much discomfort that it is better left off. In ordinary cases the bowels are opened naturally on the third or fourth day, but on the first or second after the enemata in the milder cases.

With regard to feeding, these patients require practically nothing for the first 36 hours except liquid to drink. Nutrient enemata are but rarely required. For the first six hours merely a little water (warm) is given by the mouth. After this time water, barley water, albumin water, and milk and hot water. "Stone" ginger beer seems in many cases to act in a marvellous manner in allaying sickness and getting rid of flatus. Tea is given as soon as a patient asks for it, but I am assured that the most inveterate tea-drinker has a distaste for it for several days after operation. When slight vomiting is troublesome albumin water will often be retained when nothing else will stay on the stomach. Beef-tea is never given; it has a great tendency to cause or increase distension. In 48 hours the above, together with a little jelly, soft bread and butter, and custard puddings are given; and if at this time vomiting has practically ceased but distension be troublesome it is better to give these patients a little more solid food instead of so much liquid. A morsel of pounded fish or chicken will be eaten with some relish and cause less discomfort.

In bad vomiting the plan of giving the patient a good drink, and so washing the stomach out, often does good. If this fails the opposite plan of withholding all liquids or food for 24 hours is often successful. Washing out the stomach with tube and funnel would be done as a last resort. Distension, which may go on to paresis of the bowels, is often severe and will need constant attention and watching. The principal means for its relief have been given above. There is nothing so comforting or gives so much relief as a large compress wrung out of boiling water and covering the lower part of the chest and the whole of the abdomen, and changed so often as it cools. Opening a coil of intestine for distension is a desperate measure and the last resort for the worst cases. Distension may last for a week in a severe form, and I have once, in a case of diffuse peritonitis, seen it last for a fortnight and the patient recover. Physostigmine in doses of gr. 1-80th and 1-100th every four hours sometimes seems to do good.

The tube will be required to be changed on about the third day. It is better not to attempt to remove it before this, for there may be great difficulty in replacing it. The wick will require to be withdrawn and another placed in daily. The tube will be gradually shortened or withdrawn as the discharge lessens, and towards the end of the time its place can be taken by a small gauze drain. In the case of Keith's tubes, which are exceptionally used in the diffuse cases, they will require their inner surfaces cleaned daily with a gauze wick.

Sometimes during convalescence another collection of pus forms or is dammed back in some way. It is heralded by a rise of temperature and quickened pulse and some local discomfort. It generally makes its way out through the drain track, and rarely requires anything except some manipulation, such as moving the tube up and down or, at the most, the insertion of the sterilised finger or forceps.

Subphrenic abscess, signalised by an irregular temperature, rapid pulse, cough, pleural pain, and wasting has now and then to be dealt with. The band of crepitations along the whole lower border of the lung, more pronounced in front, is a very characteristic sign. The final step in diagnosis is provided by the exploring syringe.

Sheffield.

ON THE USE OF SELECTED LACTIC ACID BACILLI AND SOURED MILK IN THE TREATMENT OF SOME FORMS OF CHRONIC ILL-HEALTH.

By GEORGE HERSCHELL, M.D. LOND.,
SENIOR PHYSICIAN TO THE KENSINGTON GENERAL HOSPITAL.

THERE is no doubt that the use of these agents in the treatment of disease is largely on the increase in this country, and as practically all the available literature upon the subject is confined to French and German journals it has appeared to me that a few hints from one who has used them largely since their first introduction may not be without value or interest.

Curdled milk has from time immemorial formed an important part of the diet of many peoples, notably those inhabiting Turkey, Roumania, Bulgaria, Servia, and some parts of Africa, the milk being in all cases curdled with a special ferment. The best known of these ferments is the Bulgarian maya with which is produced the article of food called yoghourth or yohourth. This ferment was first studied bacteriologically by Grigoroff[1] in the laboratory of Professor Massol of Geneva who found that it contained three lactic acid-forming microbes—(*a*) a long bacillus which on cultivation proved to be the most energetic lactic acid producer known; (*b*) a diplococcus; and (*c*) a streptococcus. All three coagulated milk, produced lactic acid in different proportions, and were Gram-positive. The first of these is the most important and is known as the Bulgarian bacillus or the bacillus of Massol.

We are undoubtedly indebted to Metchnikoff for the brilliant conception that the daily use of yohourth or its equivalent could be utilised in the treatment of disease, and that by means of it, or preferably by the use of a pure culture of the principal bacillus, we might inhibit abnormal putrefaction in the intestines. We owe the elaboration of a practical working method to Dr. Michel Cohendy,[2] who, working in the Pasteur Institute with the bacillus of Massol, as the result of a prolonged series of investigations ascertained the following important points: That with a normal diet the bacillus appeared in the stools in from three to four days after it had begun to be taken regularly with the food; that it took about eight days to become properly acclimatised in the intestine and that when this had taken place would continue to live and thrive for 12 more days without another dose being swallowed, after that gradually disappearing; that it caused absolutely no harm to the

[1] Massol: Revue Médicale de la Suisse Romande, 1905, p. 716.
[2] Cohendy: Comptes Rendus de la Société de Biologie, 1906, vol. i. Essais d'Acclimatation Microbienne Persistante dans la Cavité Intestinale, p. 364. Description d'un Ferment Lactique Puissant capable de s'acclimater dans l'Intestin de l'Homme, p. 558. De la Désinfection Intestinale obtenue, sans Régime Spéciale, par l'Acclimatation d'un Ferment Lactique dans le Gros Intestin, p. 602.

organism; that the presence of the bacillus in the intestine caused an increase in the number of bacilli and coccobacilli taking the Gram stain; and that its regular administration caused an increase in the weight and bulk of the fæces.

The effect of acclimatising the bacillus of Massol in the intestine is to inhibit the growth of the proteolytic microbes which are the most common cause of abnormal putrefaction and consequent auto-intoxication. This has been proved by the great diminution in the daily excretion of the ethereal sulphates which has been observed and the alteration in the character of the fæces during the process. The main agent in effecting the inhibition of other bacteria is probably the lactic acid produced, according to the general rule established by Tissier in conjunction with Martelly[3] and with Gasching[4] that an acid-producing bacillus is able in a saccharine medium to arrest the growth of a putrefactive (alkaline) organism.

As regards the harmlessness of the lactic acid which is produced in the intestine as the result of the growth of the bacillus of Massol, it has been calculated by Cohendy that whilst the average Bulgarian peasant consumes more than 10 grammes of lactic acid daily in the yohourth which forms so large a part of his diet, the amount in the 250 cubic centimetres of sour milk, the average daily medicinal dose, does not exceed 60 centigrammes. Moreover, the lactic acid which is liberated in the intestine does not remain long as such, as it will be quickly neutralised by the alkaline reaction obtaining there. This theoretical consideration is confirmed by the observed fact that the stools of patients taking curdled milk are never strongly acid.

Methods of Administering the Lactic Acid Bacilli.

We may give the lactic acid ferment to the patient either in the form of a pure culture, solid or liquid, or in the form of a curdled milk or yohourth prepared with it. In the solid form we have it now commercially obtainable in this country either in powder or tablets.[5] In liquid form we have several bouillons which can be imported into this country with very little trouble,[6] or we can preferably prepare one extemporaneously in the following manner:—

Sugar whey.—This is the medium advocated by Cohendy[7]; its taste is agreeable, it is well borne by the patient, it lends itself well to flavouring with vanilla, lemon, or sugar, and it can often be taken when curdled milk is distasteful to the patient. It is made as follows: Boil the milk gently for five minutes, add to the boiling milk 1·5 cubic centimetres of hydrochloric acid to the litre. The casein will entirely clot. Separate the whey by means of a strainer, render it just alkaline, and add 300 grammes of water, 3 grammes of gelatin, and 15 grammes of cane sugar, for each litre. Sterilise in the usual way and filter.

Malt extract solution.—This is my own favourite. It is very easily prepared and is quite agreeable to the patient. A tablespoonful of ordinary malt extract is dissolved in a pint of water, boiled for a few minutes, allowed to stand, and poured off from any sediment which may form. In making either of these cultures the appropriate dose of the powder or liquid lactobacilline is added to the liquid medium and after it has cooled to about 40° C. it is placed in an incubator or its equivalent at 37° C. for eight or ten hours.

Preparation of curdled milk.—This is quite simple, but a strict ritual must be observed if the best results are to be obtained. There are three main points which are essential for success. These are the sterilisation of the milk used, the sterilisation of the jars used to contain the milk, and the maintenance of the proper temperature during the process of curdling. Yohourth made from raw milk possesses much the best taste, but unfortunately milk as it is delivered at the house contains certainly fæcal dust from the cow, loaded with microbes, and quite possibly pathogenic germs such as cholera, tubercle, or typhoid fever. It is true that the lactic acid formed in the milk during the process of incubation will hinder the growth of these, but it will not arrest it completely. Pasteurisation at 60° C., whilst preserving the taste of the milk, does not destroy the tubercle bacilli nor the spores of the butyric acid bacillus. Sterilisation at 120° C. is efficacious but communicates such a disagreeable taste to the product that patients will not take it. By boiling for a few minutes we destroy everything except the butyric acid spores and the spores of the bacillus subtilis, which is sufficient for safety. The milk then is brought to the boil and kept so for a few minutes. It is then removed from the fire and allowed to cool to 35° C. The jars in which the milk is to be curdled are put into cold water, brought to the boil, and after five minutes removed from the saucepan and stood upside down to drain. The outsides only are to be wiped. The milk is poured into the jar and allowed to cool to 35° C. When this has occurred a little of the milk is mixed with the dose of the powder or its equivalent in crushed tablets or liquid lactobacilline and returned to the rest of the milk in the jar. The whole has now to be kept at 37° C. or thereabouts for eight or ten hours. Of course, when available a proper incubator is the best. As a rule this will not be available and one will use the hot-water box supplied by the Société le Ferment or an equivalent apparatus. This consists of a felt-lined box containing a tin of boiling water and with it very good results can be obtained, particularly if the hot water in the tin is renewed once or twice during the period of incubation. In default of this the jar may be wrapped in a flannel and placed near a stove. When made, the liquid cultivations or the curdled milk should be placed in a cold place until it can be consumed.

Conditions in which the Bacillus of Massol, either as a Pure Culture or as Curdled Milk, may be given to Patients.

(*a*) *As a food.*—Milk curdled with the bacillus of Massol is a most wholesome food and may be used as such quite apart from any question of acclimatising the bacteria in the intestine. At least 50 per cent. of the casein has been transformed into albumose and peptone, and the phosphate of lime in some way appears to have become much more soluble. As soon as clotting takes place lactic acid is liberated to the amount of about 1 per cent., but this never exceeds 1·6 per cent. even after 48 hours in the incubator. We have thus a food substance which presents all the well-known advantages of kephir without the alcohol, which is one of its chief drawbacks. In practice we may utilise curdled milk with advantage as a food pure and simple in the following conditions: anorexia nervosa; phthisis, and all affections generally in which it is advisable to superaliment the patient; hypochlorhydria and achylia gastrica (in these affections we have in curdled milk an article of diet which I have found of the greatest utility, not only on account of its supreme digestibility but also from the fact that the free lactic acid replaces to a certain extent the absent or diminished hydrochloric in activating the pancreatic secretion); chronic duodenal catarrh, probably associated in many cases with the pancreatic deficiency of secretion (in such cases I have seen undoubted benefit result from its use); and chronic gastritis and malignant disease of the stomach (in these cases it can often be retained when the food is rejected).

(*b*) *Abnormal fermentation in the intestine causing chronic ill-health either by local irritation or by auto-intoxication.*—The affections occurring in practice in which we should suspect one of these conditions are: (1) skin diseases which are not obviously of a parasitic or specific nature; (2) neurasthenia not obviously due to excessive strain or work; (3) gout, chronic arthritis, and arterio-sclerosis; (4) flatulent dyspepsia; (5) chronic diarrhœa, colitis, and mucous colitis; and (6) intestinal indigestion in children. In any of these it is our duty to make a thorough examination and ascertain by the means which are now at our disposal, first, whether there is auto-intoxication and, secondly, whether there are abnormal fermentations or putrefaction in the intestines. We must also not neglect to examine the mouth for septic roots and pyorrhœa alveolaris and ascertain whether the functions of the stomach are normal, as a large proportion of intestinal fermentations have their origin in the mouth and a number of others are gastrogenic.

(*c*) *To render the gastro-intestinal tract aseptic previously to an operation upon it.*—This is a subject which has always appeared to me to be much neglected. We find surgeons taking the greatest pains to feed the patients upon boiled water and sterilised food for days before an operation whilst taking no steps to diminish the number of putrefactive microbes in the gastro-intestinal tract. It is true that some few surgeons order an antiseptic mouth wash, but this will

[3] Annales de l'Institut Pasteur, December, 1902.
[4] Ibid., August, 1903.
[5] Lactobacilline powder and tablets (Société le Ferment, 77, Rue Denfert-Rocherdau, Paris; London agents: Roberts, New Bond-street, and Wilcox and Joseau, Haymarket); Saurin (Allen and Hanburys); Trilactine (Martindale, New Cavendish-street); Fermenlactyl (Anglo-American Pharmaceutical Co., Croydon). Lacteol (Laboratoire de Biologie, Paris. London agents: Roberts, New Bond-street).
[6] Lactobacilline Bouillon (Société le Ferment); Bulactine (A. Millet, 8, Rue Richer, Paris).
[7] Cohendy: Comptes Rendus de la Société de Biologie, 1906, vol. i., p. 559.

not go very far towards rendering the mouth aseptic if there is any degree of pyorrhœa. In such cases the teeth must in the first place be properly scaled, not only the tartar in sight being removed but that also below the level of the gums. After this the pus pockets must be properly treated with peroxide, nitrate of silver, iodine, or other appropriate agent. At the same time as a matter of routine the patient should have half a pint of curdled milk added to his diet and the operation should not be performed until there has been time for the bacillus of Massol to become acclimatised in the intestine and we have ascertained by means of acid litmus milk that such has taken place.

(*d*) *The treatment of some forms of constipation.*—It may now be taken as a settled point that many of the cases of chronic constipation which we were accustomed to term "atonic" and regard as due to defective peristalsis depending upon muscular weakness or upon deficient innervation are really of another nature. Strasburger[8] and Lohrisch[9] have shown us that in the fæces in these cases there is a considerable diminution in the solid material as compared with normal stools, and Schmidt[10] has confirmed their observations. In fact, the latter has pointed out that if patients with this form of constipation are put on a test diet in a large proportion of cases the amount of fæces (marked off for three days) is excessively small. For instance, whilst we find that a healthy person will pass in this time a quantity which will weigh about 60 grammes when dried, that of the constipated patient will average 30 grammes. That weakened peristalsis alone will not give these characteristic stools is proved by the fact that when constipation is induced by opium the stools, although small from the extraction of water, weigh the same when dry as they normally should. In these cases there is found on a microscopical examination to be a much smaller amount of undigested residues than normal, digestion being apparently too completely carried out. The result of this deficient pabulum provided for the bacteria of the intestine results in their starvation, diminution in number, and consequently a diminution in the fatty acids and gases the products of their growth which form the normal stimuli to the peristalsis of the intestine. Hence the constipation. In such cases it must be obviously futile to attempt to restore tone to the intestines by strychnine, massage, and electricity, there being no want of tone to restore. The attempt also to supply the absent stimulus to the intestine by a diet containing a superabundance of cellulose, such as brown bread, is commonly unsuccessful, as the digestion in these patients is so good that this is readily disposed of. But in the use of curdled milk we have an ideal method of combating the condition as we can introduce into the intestine an organism which produces large quantities of the normal stimulus to the peristalsis, and at the same time are able to keep it supplied with the food necessary to its growth by the simple expedient of adding a certain amount of sugar to the patient's food.

The diagnosis of this form of constipation is easy. All we have to do is to place the patient upon Schmidt's test diet for a few days, mark off the stools of three days by doses of carmine or charcoal, collect, dry, and weigh the total stools passed in this time. If below 40 grammes we may confidently assume that this condition is present. This investigation should be carried out on every case of chronic constipation which it is proposed to treat seriously with the idea of making a cure. Nothing can be more irrational than the, I am sorry to say, very common practice of putting these patients through a course of massage or electricity without having the least idea as to whether their constipation depends upon true atony of the bowel or upon the condition which has been described.

The Dose in which the Cultivations and the Curdled Milk should be given.

Anything up to a pint of curdled milk may be given during the day. In special cases much more may be given with impunity. I have now under my treatment a patient who is taking four pints a day with increasing benefit to his health and relief to his symptoms. The average daily dose of a liquid culture is 250 cubic centimetres. Some of the commercial bouillons are conveniently supplied in 250 cubic centimetre bottles (eulactine), others (lactobacilline) in litre ones. In the latter case certain precautions are necessary to prevent contamination from the air. When the bottle is uncorked it must be refastened again as quickly as possible. Avoid touching the edge of the neck of the bottle or the part of the cork which enters the bottle with the fingers. If possible after you have poured out the dose pass the neck of the bottle and the cork rapidly through the flame of a spirit lamp. If these precautions are not taken it is quite possible that the liquid may become contaminated from the air with the spores of moulds such as you get on sugar, bread, or fruit, but these are quite harmless. The bottle should always be shaken before use as many of the bacilli sink to the bottom. After a bottle of commercial bouillon has been opened it should be consumed as quickly as possible as the bacilli will continue to grow with the result that a larger amount of lactic acid is produced. When recorked it should be put in a cold place, preferably on ice, to check the growth of the bacilli.

The daily allowance should be divided into two doses which may be taken at any convenient time, on rising and retiring, before two meals, after two meals, or at 11 in the morning and 4 in the afternoon. Curdled milk may be conveniently taken at the close of a meal with cream and sugar as a dessert, or it may be taken with bread as a distinct meal. Lactic acid ferment in powder or tablet form should be taken at the close of a meal, the dose being one or two tablets or its equivalent in powder. The tablets should always be crushed before taking.

Diet during the Treatment.

From a dietetic point of view we can divide all cases into three groups: the acute, the subacute, and the chronic.

Diet of acute cases.—In these cases it is a good plan to commence by suppressing all food except solution of sugar of milk in water, solution of malt extract in water, and the culture of the bacillus which we are giving. We thus secure as rapid an acclimatisation as possible of the organism in the intestine. After two or three days of this we can proceed to a diet consisting of milk, gruel, and Evian water.

Diet of subacute cases.—For the first week we must eliminate meat from the diet, which should consist of yelks of eggs, butter, bread, potatoes, milk puddings, fruit, and vegetables. Later we can allow meat at one meal in quantity not to exceed 6 ounces.

Diet of ordinary chronic cases.—The following rules are taken from Combe.[11] 1. Avoid all substances which can act as culture media for proteolytic bacilli. Thus stock, gravy, meat jelly, extract of meat, white of egg, and milk unmixed with farinaceous material. 2. Avoid all meat fat. Limit the patient to fresh butter and yelks of egg. 3. Avoid all high meat and game. In addition to these rules it is best that meat should be taken only once a day, that alcohol except in the form of light wines in strict moderation must be cut off, and that tobacco in excess must be avoided.

As it is impossible for the bacilli properly to acclimatise themselves in the intestine unless they are provided with abundance of saccharine food, it is essential to include a certain amount of sugar in the diet scheme. One of the most convenient methods of doing this is to put 50 grammes of sugar of milk into a little bottle of filtered water and consume it during the day at meals. If preferred one or two spoonfuls of malt extract may be used instead of the sugar of milk. In cases where it is not contra-indicated light lager beer may be used to dilute the malt extract with the result of producing a very palatable drink much resembling Münchener beer.

Phenomena During the First Few Weeks.

It is important to warn the patient that he may expect some disagreeable sensations and perhaps an apparent exacerbation of his symptoms during the first couple of weeks of treatment. During the first week I have seen slight diarrhœa attended with flatulence and colicky pains. In another case there was severe headache. In another attacks of typical migraine with teichopsia and scintillating scotomata. During the second week there is often constipation and cases of chronic constipation become aggravated. During the third week the constipation disappears, the bowels become regular, and the patient progresses towards recovery. Objectively, during the third week the ethereal sulphates in the urine diminish, and during the fourth week the harmless

[8] Münchener Medicinische Wochenschrift, Dec. 29th, 1903, and Zeitschrift für Klinische Medicin, 1902, vol. xlvi., p. 413.

[9] Deutsches Archiv für Klinische Medicin, vol. lxxix., parts 5, 6, p. 383.

[10] Examination of the Functions of the Intestines by means of a Test Diet, Philadelphia, 1906.

[11] L'Auto-intoxication Intestinale, Lausanne, p. 359.

colon bacilli commence again to predominate in the stools. We should be able to recognise the lactic acid bacillus in the stools during the second week by its size and by the fact that it retains the Gram stain. We should in all cases make a periodical examination of the stools to see to what extent acclimatisation is taking place. This we do by inoculating litmus milk containing 3·5 parts per litre of lactic acid with the stools and incubating at 37° C. In this medium hardly anything will grow except the bacillus of Massol, and we can recognise it by the microscopical characters. The litmus is coloured pink by the lactic acid and remains so unless certain other organisms are present which can neutralise the acidity. In this case their presence is apparent at once to the eye. About two and a half months are required to obtain a complete transformation of the intestinal flora.

Harley-street, W.

NOTE ON A CASE OF DIPHTHERIA AND IMPETIGO CONTAGIOSA IN THE CHILD.

BY THOMAS P. PUDDICOMBE, M.B., B.S. LOND., D.P.H., M.R.C.S. ENG.,

MEDICAL OFFICER TO THE PLYMOUTH EDUCATION COMMITTEE; LATE SENIOR RESIDENT OF THE BOROUGH HOSPITAL AND ASSISTANT MEDICAL OFFICER OF HEALTH AND BACTERIOLOGIST TO THE BOROUGH OF CROYDON.

MUCH has been written in the medical journals during the last ten years on diphtheria and its prevalence in school children, together with suggestions on its mode of spread and prevention. Also in some few cases it has been noted that diphtheria primarily attacking the skin has been the cause of isolated cases or small outbreaks[1]; whilst impetigo contagiosa, one of the filth diseases, which is always more or less prevalent in children of the poorer districts, has during this time scarcely been touched upon by the many writers. And I cannot find any case reported in which the two diseases have been connected or even under suspicion of being due to the one and same cause—viz., the Klebs-Löffler bacillus.[2] All will agree, I think, in my case that the two diseases are intimately associated; and seeing that slight nasal diphtheria without clinical symptoms is so often present in school epidemics and not a few of this number have impetigo also it is reasonable to suspect that it may have some share in spreading the Klebs-Löffler bacillus.

A boy, aged eight years, was admitted into hospital with a history of spots on the face for six days and sore-throat one day. On examination he showed slight congestion of the fauces and a small patch of membrane on the right tonsil, slight nasal discharge, together with four definite impetigo spots on the upper lip and one on the chin. His temperature was 99° F. He did not appear ill or complain of his throat. 4000 units of anti-diphtheritic serum were given, and the case afterwards ran a normal course with the exception of the occurrence of an enlarged submaxillary gland at the end of the third week. The impetigo was cured in a week with ammoniated mercury ointment.

On admission a swab was taken of the throat and nose; also two of the scabs on the upper lip to the right of the nose were removed, and a third swab was inoculated from the moist surface under the scabs. All swabs were smeared on blood serum and incubated at 37° C. for 12 hours, when the three cultures showed more or less typical growths, the only macroscopical difference being that the culture from the impetigo spots showed the most abundant growth and that from the nose very little. Under the microscope smears in each case showed the presence of bacilli resembling the Klebs-Löffler organism, the growth from the spots showing a few cocci and abundant Neisser-staining bacilli. The culture was now sent to the Lister Institute for test of virulence and they report as follows:—

The culture contained diphtheroid bacilli, cocci, and large sporing bacilli. Ascitic agar was used for plating and pure culture of diphtheroid bacillus isolated; this was inoculated into peptone beef broth and following inoculations carried out:—

No. I. guinea-pig received subcutaneously 0·5 c.c. of 48 hrs. broth culture.
" II. " " " 1·0 c.c. " " "
" III. " " " 2·0 c.c. " " "
" IV. " " " 2·0 c.c. " " "
+ 1-10th c.c. of diphtheria antitoxin.

Results.—Guinea-pig No. III. died in 24 hours.
" " I. & II. " 48 "
" " IV. lived.

Post-mortem examinations showed in I., II., and III. presence of gelatinous hæmorrhagic œdema at the site of inoculation and congested suprarenals; the bacillus was recovered and re-cultivated from the tissues, thus showing the diphtheroid organism present in the culture is a virulent Klebs-Löffler bacillus.

The case thus shows three great factors: (1) the organisms present were the true Klebs-Löffler bacilli; (2) for this reason impetigo lesions should always be regarded as suspicious; and (3) the lesions were prior to the faucial symptoms and thus possibly the primary seat of infection.

All medical officers of health and school inspectors know how difficult it is at times, in outbreaks of school diphtheria, to trace the origin back to one individual case, or even to find the carrier after the infected ones have been segregated in hospital. This case would show, I think, that cases of impetigo in school children should be looked upon as a possible carrier case, and swabs taken of the spots if diphtheria is or has been prevalent amongst children in the same class.

I publish this, a single case, hoping that it may stimulate further investigation, and may prove of help to the new organisation of school medical officers in dealing with diphtheria.

Plymouth.

[1] For example, Brit. Med. Jour., vol. i., 1906: here the skin of the hands and feet were the first affected in ulcer form. THE LANCET of April 29th, 1905, describes a fatal case of primary diphtheria of the groin. THE LANCET of April 3rd, 1897, records a fatal case of diphtheria of the umbilicus in an infant 14 days old.

[2] In the Brit. Med. Jour., vol. i., 1898, a case is described which possibly may be identical, but in this case the lesions were diagnosed as herpes.

NOTES ON EXPERIMENTS AS TO THE CONSTANCY OF THE CARBOHYDRATE REACTIONS OF THE STREPTOCOCCI.

BY JOHN RITCHIE, M.B., CH.B. EDIN., D.P.H.,

SENIOR MEDICAL ASSISTANT AND BACTERIOLOGIST, CITY HOSPITAL, EDINBURGH.

THE method of classifying streptococci originally described by Gordon[1] and developed by Houston,[2] and Andrewes and Horder[3] depends on the supposition that any strain of streptococcus has biochemical characteristics so constant that its origin can be determined after a more or less prolonged sojourn in a foreign environment. The evidence on which this supposition is based is still somewhat incomplete. Gordon tested ten streptococci on three occasions and found that their reactions remained constant. Again, streptococci were examined on several occasions after culture for periods up to a fortnight and found to give constant reactions. Of 11 strains examined before and after passage through the mouse nine were found constant. Andrewes and Horder state that the constancy of the reactions is remarkable, but admit that exceptions occur. It was in order to determine if possible whether any connexion could be traced between the reactions given by any streptococcus and the age of the culture, the medium employed, or the method of growth that the following experiments were undertaken.

Organisms used.—The organisms used were as follows: 1. Five cultures of streptococci from strains used by Dr. F. W. Andrewes and Dr. T. J. Horder. For these I am indebted to the kindness of Professor J. M. Beattie who obtained them from those gentlemen. 2. Five cultures of streptococci isolated from saliva. 3. A streptococcus from a case of cellulitis. 4. A culture of the "micrococcus rheumaticus." In addition three strains of bacillus coli communis and one of bacillus paratyphosus were used as controls as after to be described. These organisms were subcultured on various media for various lengths of time and grown under both aerobic and anaerobic conditions. They were then tested against litmus milk and the following carbohydrates—saccharose, lactose, raffinose, inulin, salicin, and mannite—an acid reaction after three days' incubation at 37° C. being

[1] Report of the Medical Officer to the Local Government Board, 1903-04; also THE LANCET, Nov. 11th, 1905, p. 1400.

[2] Report of the Medical Officer to the Local Government Board, 1903-04.

[3] THE LANCET, Sept. 15th, 1906, p. 708.

taken as positive. The results are shown in the following tables:—

TABLE I.

Streptococcus No. I. Type "2E" (Andrewes and Horder).		Milk.	Saccharose.	Lactose.	Raffinose.	Inulin.	Salicin.	Mannite.
Reactions of "2E"		+	0	+	0	0	+	0
Cultures 2-10 days old.	Agar culture ... 8/12/06	+	+	+	0	0	+	0
	,, ,, ... 8/1/07	+	0	+	0	0	+	0
	Broth ,, ... 12/1/07	+	0	+	0	0	+	0
	Agar ,, ... 16/1/07	0	+	0	0	0	+	+
	,, ,, ... 25/1/07	0	+	+	0	0	+	+
Agar, 3 days; after milk, 13 days	21/1/07	A	+	+	0	0	+	+
Broth, 8 days (anaerobic) ...	31/1/07	+	+	+	0	0	+	0
,, 14 ,, ...	2/2/07	A	+	0	0	0	+	+
,, 5 ,, (anaerobic) ...	4/2/07	+	+	+	0	0	+	0
,, 17 ,, ,, ...	24/2/07	+	0	+	0	0	+	0
Milk, 3 ,, ...	27/2/07	+	0	+	0	0	+	0

A = Acidity in milk without clotting.

It will be noted that the reactions of this strain upon milk, saccharose, mannite, and, to a less degree, on lactose are all inconstant. The variation in the mannite reaction is interesting, as this test constitutes the main difference between "streptococcus salivarius" and "streptococcus fæcalis."

TABLE II.

Streptococcus No. II. Type "4A" (Andrewes and Horder).		Milk.	Saccharose.	Lactose.	Raffinose.	Inulin.	Salicin.	Mannite.
Reactions of "4A"		+	+	+	0	0	+	+
Cultures 2-10 days old.	Agar culture ... 8/12/06	0	+	+	0	0	+	+
	,, ,, ... 8/1/07	0	+	+	0	0	+	0
	,, ,, ... 16/1/07	0	+	0	0	0	+	0
	,, ,, ... 25/1/07	0	+	+	0	0	+	0
Agar, 3 days; after milk, 13 days	27/1/07	0	+	+	0	0	+	0
Broth, 4 days (anaerobic) ...	4/2/07	0	+	0	0	0	0	0
Agar, 20 ,, ...	4/2/07	0	+	0	0	0	+	0
Broth, 5 ,, ...	22/2/07	0	+	0	0	0	+	0

In this case it would seem that prolonged subculture was associated with loss of biochemical activity. The action on milk was lost early, as was that on mannite. The action on lactose disappeared 58 days after the first test and was not regained during the next 18 days. The reaction with salicin was absent on one occasion.

TABLE III.

Streptococcus No. III. Type "4A" (Andrewes and Horder).		Milk.	Saccharose.	Lactose.	Raffinose.	Inulin.	Salicin.	Mannite.
Reactions of "4A"		+	+	+	0	0	+	+
Cultures 2-10 days old.	Agar culture ... 8/12/06	+	+	+	0	0	+	+
	,, ,, ... 8/1/07	+	0	+	0	0	+	0
	Broth ,, ... 12/1/07	+	+	+	0	0	+	+
	Agar ,, ... 25/1/07	+	+	+	+	0	+	+
Agar, 3 days; after milk, 13 days	27/1/07	+	+	+	+	0	+	+
Broth, 4 days (anaerobic) ...	4/2/07	+	+	+	0	0	+	+
Milk, 24 ,, ...	6/2/07	+	+	+	0	0	+	+
Agar, 20 ,, ...	20/2/07	+	0	0	0	0	+	0
Broth, 17 ,, (anaerobic) ...	24/2/07	+	+	+	0	0	+	+
Milk, 3 ,, ...	27/2/07	+	+	+	0	0	+	+
Agar, 24 hours	1/3/07	+	+	+	0	0	+	+

This strain was very nearly constant; on two occasions it acted on raffinose and on two occasions failed to act on mannite. A culture grown for 20 days on agar and tested on Feb. 20th, 1907, showed marked lack of biochemical activity.

TABLE IV.

Streptococcus No. IV. Type "2N" (Andrewes and Horder).		Milk.	Saccharose.	Lactose.	Raffinose.	Inulin.	Salicin.	Mannite.
Reactions of "2N"		0	+	0	0	0	+	0
Cultures 2-7 days old.	Agar culture ... 8/12/06	+	0	+	0	0	0	0
	,, ,, ... 8/1/07	+	0	+	0	0	+	0
	Broth ,, ... 12/1/07	+	0	+	0	0	+	0
	Agar ,, ... 25/1/07	+	0	+	0	0	+	0
Agar, 3 days; after milk, 13 days	27/1/07	+	0	+	0	0	+	0
Broth, 4 days (anaerobic)... ...	4/2/07	+	0	+	0	0	+	0
,, 17 ,, ,, ...	24/2/07	+	0	+	0	0	+	0
Milk, 3 ,, ...	27/2/07	+	0	+	0	0	+	0
Agar, 2 ,, ...	2/3/07	+	0	+	0	0	+	0

The reactions of this strain, though very nearly constant, never corresponded with those of the type under which it was originally described. It would appear as though the original organism had been ousted by some more vigorous invader. The culture was "plated out" three times but no strain could be found giving the "2N" reactions.

TABLE V.

Streptococcus No. V. Type "2F" (Andrewes and Horder).	Milk.	Saccharose.	Lactose.	Raffinose.	Inulin.	Salicin.	Mannite.
Reactions of "2F"	+	+	+	+	0	+	0
Agar, 4 days 8/12/06	0	+	+	+	0	0	0
,, 2 ,, ... 8/1/07	0	+	+	+	0	0	0
,, 5 ,, ... 25/1/07	0	+	+	0	0	+	0

On the three occasions when this strain was tested the reaction with milk was negative, while those on raffinose and salicin were inconstant.

TABLE VI.

Streptococcus No. VI. (From a case of cellulitis.)	Milk.	Saccharose.	Lactose.	Raffinose.	Inulin.	Salicin.	Mannite.
Agar, 2 days 18/2/07	+	+	0	0	0	+	0
,, 4 ,, ... 25/2/07	+	0	+	0	0	+	0
Milk, 3 ,, ... 2/3/07	+	0	+	0	0	+	0

This streptococcus, when first tested, acted on saccharose but not on lactose. On the other two occasions this action was reversed.

TABLE VII.

Streptococcus No. VII. (From saliva.)	Milk.	Saccharose.	Lactose.	Raffinose.	Inulin.	Salicin.	Mannite.
Agar, 24 hours 7/5/07	+	+	+	+	+	+	0
,, 4 days 10/5/07	+	+	+	+	0	0	0
,, 9 ,, ... 16/5/07	0	+	+	+	0	0	0
,, 24 hours 21/5/07	A	0	+	+	+	0	0
Broth, 2 days 1/6/07	+	0	+	0	+	0	0
,, 8 ,, ... 6/6/07	+	+	+	0	+	0	0
,, 20 ,, ... 15/6/07	+	+	+	+	+	0	0

In this case it is interesting to note the marked activity when first tested, the rapid loss of activity, and the later approximation to the type-form.

TABLE VIII.

Streptococcus No. VIII. (From saliva.)	Milk.	Saccharose.	Lactose.	Raffinose.	Inulin.	Salicin.	Mannite.
Agar, 24 hours 7/5/07	+	+	+	+	0	0	+
,, 4 days 10/5/07	+	+	+	+	0	0	0
,, 9 ,, ... 16/5/07	0	+	+	+	0	0	0
,, 4 ,, ... 20/5/07	0	+	+	+	0	0	0
Broth, 2 ,, ... 1/6/07	+	+	+	0	0	0	0
,, 8 ,, ... 7/6/07	A	+	+	0	0	0	0
,, 16 ,, ... 15/6/07	0	+	+	+	0	0	0

This strain rapidly lost the mannite reaction, while that on milk and on raffinose varied.

TABLE IX.

Streptococcus No. IX. (From saliva.)	Milk.	Saccharose.	Lactose.	Raffinose.	Inulin.	Salicin.	Mannite.
Broth, 3 days 18/5/07	+	+	+	+	0	0	0
,, 3 ,, ... 20/5/07	+	+	+	+	0	0	0
,, 8 ,, ... 25/5/07	0	+	+	+	0	0	0
,, 4 ,, ... 3/6/07*	0	0	0	0	0	0	0
,, 6 ,, (anaerobic) ... 14/6/07*	0	0	0	0	0	0	0
,, 5 ,, ... 16/6/07*	0	0	0	0	0	+	0

* On these occasions glucose was acted on and streptococci were recovered by subculture from the negative tubes.

TABLE X.

Streptococcus No. X. (From saliva.)	Milk.	Saccharose.	Lactose.	Raffinose.	Inulin.	Salicin.	Mannite.
Broth, 2 days 1/6/07	A	+	+	0	0	0	0
,, 10 ,, ... 9/6/07	A	+	+	0	0	0	0
,, 4 ,, (anaerobic) ... 9/6/07	A	+	+	0	0	0	0
,, 6 ,, ... 15/6/07	0	+	+	+	0	0	0

TABLE XI.

Streptococcus No. XI. (From saliva.)	Milk.	Saccharose.	Lactose.	Raffinose.	Inulin.	Salicin.	Mannite.
Broth, 24 hours... ... ... 24/5/07	+	+	+	0	+	0	+
,, 4 days 3/6/07	+	+	+	+	+	0	+
,, 9 ,, ... 10/6/07	0	+	0	0	+	0	+

TABLE XII.

Micrococcus rheumaticus. (Laboratory culture.)	Milk.	Saccharose.	Lactose.	Raffinose.	Inulin.	Salicin.	Mannite.
Cultures 3–7 days old. Agar 8/12/06	+	+	+	0	0	+	0
,, ... 8/1/07	+	+	+	0	0	+	0
,, ... 1/2/07	+	+	+	0	0	+	+
,, ... 26/2/07	+	+	+	0	0	+	+
,, ... 1/3/07	+	+	+	0	0	+	+
Agar, 24 hours... ... ... 5/5/07	+	+	+	0	0	+	0
Broth, 7 days (anaerobic) ... 9/5/07	+	+	+	0	0	+	+
Agar, 10 ,, ... 15/5/07	+	+	+	0	0	+	+
Broth, 15 ,, ... 19/5/07	0	+	+	0	0	0	0

The mannite reaction was variable. In addition it will be noted that upon one occasion both the milk and salicin reactions were absent. In dealing with this organism it was observed that the degree of coagulation produced in milk at the end of three days varied greatly. As a rule, the whole of the milk was coagulated but on several occasions only a small soft clot was found, the rest of the medium being fluid.

On reference to these tables it will be seen that no one among the organisms tested was constant in its reactions, while some showed marked variations. This, however, might quite possibly be due, not to changes in the biochemical characters of the organisms, but to alterations in the carbohydrate broths against which they were tested. In order to eliminate as far as possible this source of error three strains of bacilli coli communis were used as controls during the course of the experiments. They were tested after growth both under aerobic and anaerobic conditions at 37° C. and at room temperature. Their reactions were constant and are shown in Table XIII. During the latter period of the experiments a culture of bacillus paratyphosus was also employed. Tested on five occasions its reactions were found to be constant.

TABLE XIII.

—	Milk.	Saccharose.	Lactose.	Raffinose.	Inulin.	Salicin.	Mannite.
Bacillus coli communis, No. I. Tested 19 times. Cultures, 1–32 days old	+	+	+	+	0	0	+
Bacillus coli communis No. II. Tested 18 times. Cultures 1–36 days old	+	+	+	+	0	+	+
Bacillus coli communis No. III. Tested 17 times. Cultures 1–50 days old	+	0	+	0	0	+	+
Bacillus paratyphosus. Tested five times. Cultures 1–58 days old ...	0	0	0	0	0	0	+

From these results it would appear that if the chemical constitution of the carbohydrate media does change with time, the changes are not sufficiently marked to affect the reactions of bacillus coli or bacillus paratyphosus.

Conclusion.—While admitting that the number of experiments described is far too small and the time over which they have extended far too short to permit of my dogmatising as to the possible connexion between prolonged subculture and biochemical activity, I venture to suggest that they indicate a possibility of error in the classification of any given strain of streptococcus on the strength of a single examination of its carbohydrate reactions.

My thanks are due to Professor W. S. Greenfield for permission to carry out these experiments in the pathological laboratory of the University of Edinburgh.

Edinburgh.

PRELIMINARY NOTE ON AN ORGANISM DISCOVERED IN A CASE OF EPIDEMIC DIARRHŒA.

BY R. STENHOUSE WILLIAMS, M.B., C.M. EDIN., J. ORR, L.R.C.P. EDIN., AND H. LEITH MURRAY, M.D. ABERD.,

DEPARTMENT OF PUBLIC HEALTH, UNIVERSITY OF LIVERPOOL;

AND

C. RUNDLE, M.D. LOND., AND A. E. WILLIAMS, M.D. EDIN.,

NEW CITY HOSPITAL, FAZAKERLEY, LIVERPOOL.

IN the summer of 1907 it was decided to admit cases of epidemic diarrhœa into the Liverpool City Hospital, Fazakerley. The number of cases which came under observation was relatively few owing to the wetness of the season, but from one of them, a case presenting all the clinical features of the disease, the organism which is the subject of this preliminary note was obtained. A review of the many unsatisfactory attempts to isolate a specific organism from the fæces led us to adopt the method of blood culture, the

more so as this has proved so successful in typhoid fever. Seven cases were investigated, six of them during life. In these about four cubic centimetres of blood were received directly from a vein in the forearm into a syringe containing an equal amount of a sterile solution of 1 per cent. citrate of sodium in 0·75 per cent. saline solution. The mixture was immediately inoculated into ascitic fluid broth, ox bile, milk, blood serum, MacConkey's medium, and agar. Five cases proved sterile in all the media. In the sixth a short motile bacillus was recovered from the ascitic fluid broth which unfortunately died out, in spite of frequent subculture, before we had time thoroughly to investigate it. In the seventh case heart's blood was obtained immediately after death. The surface of the right ventricle having been seared and a sterile pipette introduced blood was withdrawn and inoculated on an agar slant. After incubation at 35° C. a pure culture of the organism which is the subject of this note was obtained.

Morphological characters.—A short cocco-bacillus, highly motile and flagellated. The flagella are attached to the sides of the bacillus near the ends and are shorter and thicker than those of bacillus typhosus.

Staining reactions.—It retains the ordinary simple stains but is decolourised by Gram's method.

Cultural reactions.—It grows well on all the ordinary media. Comparative reactions on potato, glucose agar, lactose litmus agar, glucose gelatin, dulcite gelatin, neutral red broth, mannite broth, and peptone water readily differentiate it from bacillus typhosus, bacillus paratyphosus A and B, Gaertner's bacillus, and bacillus coli. In litmus milk no apparent change takes place even after incubation for many days. This we regard as a very valuable differential test. In addition, many points of difference are made out by cultivation on carbohydrate peptone water. The presence of easily stained flagella readily distinguishes it from the bacillus of Flexner and Shiga.

Agglutination reactions.—A rabbit was given an intraperitoneal inoculation of an emulsion in 0·75 per cent. saline solution from a 24 hours' growth on agar. Diarrhœa was present for four days after the inoculation. Blood was obtained from the marginal vein of an ear 26 days later and that from a normal rabbit was used as a control. These were mixed in varying proportions with 24 hours old broth cultures and examined at laboratory temperature with 1-6th lens. The results, as the accompanying table shows, were very pronounced and would appear to place the organism near the paratyphoid B group.

—	Dilutions.						
	1 in 25.	1 in 50.	1 in 100.	1 in 500.	1 in 1000.	1 in 2000.	1 in 4000.
Bacillus typhosus.	+ 1½ hrs.	+ 2 hrs.	–	–	–	–	–
Bacillus paratyphosus A.	–	–	–	–	–	–	–
Bacillus paratyphosus B.	+	+	+ 2 hrs.	–	–	–	–
Bacillus enteritidis (Gaertner).	–	–	–	–	–	–	–
Bacillus coli.	–	–	–	–	–	–	–
Bacillus F.	+ statim.	+ statim.	+ 10 mins.	+ 20 mins.	+ ¾ hr.	+ 1½ hrs.	+ 2 hrs.

Animal experiments.—Intraperitoneal inoculation produced death in mice, rats, and guinea-pigs; two rabbits were inoculated but did not die, although the blood of one of them subsequently showed marked agglutination as seen in the chart above. Feeding experiments with mice, rabbits, and guinea-pigs were unsatisfactory. But when three young puppies were fed on 24 hours old milk cultures they all developed diarrhœa. One died within 48 hours acutely emaciated, with copious diarrhœa and much tenesmus. Sections of the intestine—especially the large intestine—showed œdema of the mucous membrane, small round-celled deposit and the presence of a bacillus having the appearance of the original organism. On one occasion a pure culture was recovered from the stool during life.

Conclusions.—This organism is closely related to the paratyphoid B group. It produces diarrhœa in young puppies. How far it may be a cause of epidemic diarrhœa is a matter which we propose to investigate during the present summer.

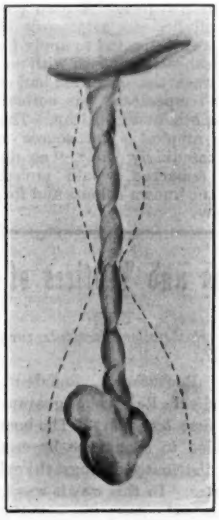
Clinical Notes:

MEDICAL, SURGICAL, OBSTETRICAL, AND THERAPEUTICAL.

TORSION OF AN APPENDIX EPIPLOICA IN A BILOCULAR HERNIAL SAC.

BY JAMES E. ADLER, M.R.C.S. ENG., L.R.C.P. LOND.,
HOUSE SURGEON AT THE LONDON HOSPITAL.

A ROBUST, healthy woman, aged 72 years, was admitted into the London Hospital on June 10th last, under Mr. Percy Furnivall, for strangulated inguinal hernia. She had suffered from a reducible inguinal hernia for 20 years, during which time she had worn a truss. On the previous day, however, she was unable to squeeze back the whole rupture. On admission a hard lump of about the size of a goose's egg was seen in the left inguinal region, passing internal to the spine of the os pubis and situated above Poupart's ligament. The lump was tender to palpation, dull on percussion, and gave no expansile impulse on coughing. Except for a small lump of the size of a walnut the mass could be slowly reduced by taxis without gurgling. The general condition of the patient was good. There was neither constipation nor vomiting. The abdomen was lax and moved well. The pulse was 78, fair in volume, and the tension was good.



The dotted line shows the position of the bilocular hernial sac. The twisted appendix epiploica is attached to the large intestine above. Half actual size.

Under an anæsthetic an attempt was made to reduce the remainder of the hernia by taxis. This, however, proved unsuccessful and therefore the usual operative measures were proceeded with. The following condition was found. Lying in an œdematous sac was a cord-like mass of omental tissue which ended below in an enlargement of about the size of a chestnut. The cord was tightly twisted on itself and contained ten half turns, and except for the enlarged distal extremity, which was bound down to the sac by recent adhesions, the whole was lying free in a hydrocele of a hernial sac. The neck of the sac tightly constricted the cord-like mass of tissue and this on being followed towards its abdominal end was found to pass through into a second sac. The cord-like mass was found to be attached to the large intestine and proved to be an enlarged elongated appendix epiploica; this was ligatured and then removed. The sac was twisted up and obliterated and the operation completed in the usual way. The patient made an uninterrupted recovery.

I have to thank Mr. Furnivall for permission to publish

this case and I am much indebted to Mr. H. L. Barnard for demonstrating the exact conditions present.

A NOTE ON A CASE OF SUPPURATIVE PAROTITIS IN AN INFANT.

BY P. MAYNARD HEATH, M.S. LOND., F.R.C.S. ENG.,
ASSISTANT SURGEON TO THE EVELINA HOSPITAL FOR SICK CHILDREN, SOUTHWARK.

THE patient, aged three months, was sent to the Evelina Hospital by Mr. W. A. Montgomery, of Worcester Park, who gave me the following history. "Three weeks ago the baby was fretful and feverish, with slight convulsions. The temperature was 101·6° F. A squint developed and the head was retracted with marked rigidity of the posterior cervical muscles. There was no vomiting, nor has there been any since. Under the influence of sodium bromide the child was induced to sleep. On the third day there was marked Cheyne-Stokes respiration which lasted 24 hours. The symptoms gradually subsided, but two days ago the child developed a considerable swelling below and behind the left ear and showed evident signs of being in pain."

When seen by me the swelling corresponded in position to the left parotid gland. The skin over it was slightly œdematous but there was no fluctuation. The head was drawn backwards and to the left, with marked rigidity of the neck muscles on the left side. There were no signs of intracranial disease, and the temperature was 99·2°. The cavity of the mouth appeared to be clean, but on making pressure over the parotid swelling a bead of pus appeared at the orifice of Stenson's duct. A pure culture of staphylococcus pyogenes citreus was afterwards obtained from the pus. The mother was instructed to apply fomentations to the swelling and to cleanse the mouth with an antiseptic lotion. By the following week the condition had completely cleared up and the child's temperature was normal. The child was breast fed and was otherwise healthy. There was no disease of the mother's nipple. The source of infection was apparently an exceedingly dirty "comforter" which, as Mr. Montgomery remarked, would probably have yielded micrococci of all the known colours and formations.

Devonshire-street, W.

Reviews and Notices of Books.

Studies from the Rockefeller Institute for Medical Research. Vol. VI. 1907.

IN 1901 Mr. Rockefeller founded the Rockefeller Institute for Medical Research, guaranteeing a sum of $200,000 for the first ten years. The board of directors of the institute decided to commence by creating a number of scholarships to be distributed amongst the existing laboratories in the United States. In this way it was hoped that several ends might be attained: first, the enlisting of the coöperation of various investigators in different places; secondly, the assisting of some promising lines of research which could not be continued for lack of funds; and, lastly, the discovery of who and where were the persons who desired to undertake research work and what were their qualifications. 23 grants were made to 18 different laboratories and three men were sent abroad to pursue special investigations, two in Ehrlich's laboratory in Frankfort and one in Koch's Institute in Berlin. After a year's trial it was decided to form a laboratory with its own staff of workers, and the founder gave a larger gift to enable the directors to acquire land and to build a laboratory, but meanwhile a building was found that served as a temporary laboratory. Dr. Simon Flexner was appointed chief director, and 18 months were spent in finding a suitable site and in drawing up plans for the new building, and five of the directors of the institute visited Europe to examine similar institutions. As to the staff, with each year's experience the conviction has steadily grown that the institute must to a large extent train its own staff, and to get in touch with the class from which the members of the staff could be chosen a number of resident scholarships were created. The work done by, and under the auspices of, the institute has been collected in volumes of reprints, and the sixth volume lies before us and from it we have taken this account. In 1905 the institute obtained control of the *Journal of Experimental Medicine* and that serves as a special organ of publication. The new building was completed in 1906 and it seems admirably fitted for the work of the institute. It has been built and fitted up with the most elaborate and suitable apparatus and the expense has been considered of secondary importance.

This sixth volume of reports contains some 40 papers, and though none of them can be considered as epoch-marking, yet each contains some proof of progress in experimental medicine. The first paper is devoted to a study of the spirillum of relapsing fever, by Professor F. G. Novy and Mr. R. E. Knapp. They conclude that this spirillum is not protozoal in nature but really bacterial. They show that during the stage of decline a germicidal body and an immunising body are present in the blood and infected rats and monkeys can be promptly cured by injecting hyper-immunised blood.

Dr. Richard M. Pearce has studied the attempts at repair made by livers which had been damaged by the injection of hæmagglutinative sera. The first sign of repair is the occurrence of mitotic figures in the liver cells after 38 hours. Then the endothelial cells proliferate and a granulation tissue forms, replacing the necrotic areas. Later, the proliferated liver cells largely replace the new connective tissue. New bile-ducts form and some of their epithelium is converted into liver cells.

Dr. S. J. Meltzer and Dr. John Auer have reported experiments in which the action of magnesium salts has been investigated and they find that the salts have no irritating effect even when employed in strong solution; that they cause a more or less complete block both for afferent and efferent impulses, and that this effect is produced whatever the concentration of the solution. They have also studied the subcutaneous and intravenous injection of magnesium salts, and they maintain, in opposition to MacCallum, that by neither method of injection is purgation or intestinal peristalsis produced. In fact, the injection of magnesium salts inhibits some forms of intestinal peristalsis.

Dr. Wilfred H. Manwaring has a useful paper in which he shows that all attempts to apply physical chemistry to serum pathology have as their foundation the assumption that the effect of certain solutions is a direct measure of the amount of a certain free or bound component in those solutions, but the assumption rests on no experimental grounds and cannot be verified until we can isolate toxins, antitoxins, and other such bodies. Thus it follows that measurements so far made in serum pathology are practically only of historic interest to the physical chemist.

Dr. Meltzer and Dr. Auer have investigated the action of ergot on the stomach and intestines and they have found that it increases the spontaneous movements and augments the motor effect of the vagus, but atropine greatly reduced the effect of the ergot. The action of alcohol on the secretion of bile has been studied by Dr. W. Salant and the experiment showed that it had no effect on the amount of bile secreted. Dr. Martha Wollstein investigated the question of the presence of influenza bacilli in the throat and bronchial mucus of children and she found that the bacillus does not occur in the throats of healthy children but that it persists long after recovery from influenza; Dr. Wollstein considers that the term "pseudo-influenza bacillus" should be discarded.

A valuable paper is that by Dr. Meltzer and Dr. Auer

on the effects of intraspinal injection of magnesium salts on tetanus; and they show that intraspinal injections of magnesium sulphate in doses which do not affect the respiratory centre or any other vital function are capable of abolishing completely all clonic convulsions and tonic contractions in cases of tetanus in human beings and experimental tetanus in monkeys. The relaxing effects of the injections may last 24 hours or more. Of the three cases of human tetanus in which the method was tried one recovered, and in the two fatal cases complete relaxation of the spasms occurred.

Dr. L. Kast and Dr. Meltzer examined the question whether the abdominal viscera are capable of feeling pain, and they found that in animals the gastro-intestinal canal possessed sensibility to pain. But if a laparotomy is performed on a human being under the local injection of cocaine no pain is evinced when the intestine is handled or cut, and this result was shown to be due to an anæsthetic effect of the cocaine on the intestine, though the cocaine had only been injected subcutaneously into the abdominal wall. The authors consider that the cocaine has a general anæsthetising effect. It is clear that these observations on the effect of cocaine may prove of practical value in medicine.

We have mentioned a few of the papers in this interesting volume in order to show that the Rockefeller Institute is doing good work, and in the endowment of laboratories like these there is ample scope for the superabundant money of multi-millionaires.

A Short Practice of Midwifery, embodying the Treatment adopted in the Rotunda Hospital, Dublin. By HENRY JELLETT, B.A., M.D. Dub., Gynæcologist and Obstetrical Physician, Dr. Steevens' Hospital; ex-Assistant Master, Rotunda Hospital. Fifth edition, revised. With 200 illustrations and an appendix containing the statistics of the hospital for the last 17 years. London: J. and A. Churchill. 1908. Pp. 654. Price 10*s.* 6*d.* net.

IN the fifth edition of this very useful book Dr. Jellett has made several changes in the sequence of chapters so that it may be similar in point of arrangement to his larger manual of midwifery. The two books are therefore now more or less complementary to one another. The revision of this edition has been well carried out and a number of new illustrations have been added. It is surprising to find, however, that in the chapter on the early development of the ovum no attempt has been made to give the undoubtedly correct views of Selenka, Graf Spee, van Beneden, and others as to the mode of formation of the human chorion and amnion. Dr. Jellett still tells his readers that the chorion is formed by the fusion of the false amnion and the thinned-out remnant of the zona pellucida, which in the human ovum is almost certainly not the case.

In the first chapter, on asepsis in midwifery, we think that the author is hardly consistent; he accepts Döderlein's statements as to the destructive action of the vaginal bacillus on pyogenic organisms and yet recommends ante-partum vaginal douching in cases where any operation is to be performed, the very condition in which we think it most essential that the action of the vaginal organisms should be maintained as far as possible intact, which will certainly not be the case if they are removed by douching. The book is, however, on the whole an extremely good one and the addition of the statistics of the Rotunda Hospital for the past four years adds considerably to the value of the analysis of the cases of labour given, amounting as they do now to nearly 26,000. A new table has also been added in which an attempt is made to estimate the duration of pregnancy from as accurate a determination of the height of the fundus of the uterus as possible. So many factors enter into the determination of the exact level of the fundus of the pregnant uterus that any such table will have to be used with considerable caution.

Le Criminel. By Dr. EMILE LAURENT. Paris: Vigot Frères. 1908. Pp. 243. Price 3.50 francs.

THE first three chapters of this book are devoted to the definition of crime and the criminal and to the morphology, physiology, and psychology of the latter. The author is of opinion that there is no precise anatomical peculiarity allowing us to affirm that there exists a criminal type, but that there is an identity between the anatomical and physiological stigmata of degeneration and those which have been attributed to the criminal type. The psychology of the criminal is treated of in much detail, and his intelligence, imagination, affectivity, vanity, passions, volition, and habits are analysed carefully. Intelligence and imagination are found to be below the normal, and it is remarkable how seldom the ruses and artifices of criminals are original and how frequently they are such as can be predicted from experience by the officers of the law. Idleness, vanity, and the gross passions are the causes of most crimes, and the author classifies thieves into those who rob because they are too idle to work honestly, those who rob because legitimate labour does not reward them with a sufficiency to enable them to satisfy their various passions, and those who rob by instinct and who may come from classes who are neither idle nor poor. In Chapter IV. the factors of criminality are considered, such as race, habitat, heredity, alcoholism, and education. Dr. Laurent lays considerable stress on the necessity for that form of education which develops the conscience and teaches the obligation of generous sentiments. The author sees also in the trend of political events and in their influence upon social life the augmentation of the thriftlessness of the worker and the diminution of the resisting capacity of his moral personality. The last chapter is upon the responsibility of the criminal and punishment. Dr. Laurent lays it down that all criminals, except the insane and the epileptic when they obey irresistible impulsions, are responsible, and that without punishment—that is to say, without intimidation—the perverse subject would be without succour against his perversity and would have only it to obey. The author finishes his book with a plea in favour of capital punishment. It is right to deprive a murderer of a place in social life, and the punishment of death is more humane and less expensive than the horrors of perpetual confinement.

The book is replete with interesting information, and the conclusions drawn from the facts are stated with the logical clarity characteristic of the best French authors. We can strongly recommend a book the subject matter of which is of great interest and the style of which does justice to that matter.

LIBRARY TABLE.

Atlas der Venerischen Affectionen der Portio Vaginalis Uteri und der Vagina. (Atlas of Venereal Affections of the Vaginal Portion of the Cervix and of the Vagina.) By Dr. MORIZ OPPENHEIM. Leipsic and Vienna: Franz Deuticke. 1908. Pp. 76 and plates. Price M. 14.—This atlas contains a number of good illustrations of various venereal affections of the cervix and vagina, some of them of frequent occurrence and others met with but rarely. The letterpress supplies a description of each of the plates and also a section in which the differential diagnosis of the various conditions illustrated is considered. The first plate illustrates the uncommon condition of herpes of the portio vaginalis as well as an example of leucoplakia of the portio and gonorrhœal maculæ. Amongst the other venereal conditions figured are the various syphilitic affections of the

cervix and vagina, including hard chancres, macular and papular syphilides and gummata, local contagious ulcers, and syphilitic and gonorrhœal warts. The last plate for the purpose of comparison contains some excellent drawings of the various forms of erosions. The author estimates the frequency of chancre of the cervix as occurring in some 8 to 10 per cent. of all cases of syphilis, but it must be remembered that his figures refer mainly to prostitutes and the frequency of this condition in ordinary gynæcological practice must be much less than this. We are surprised to find no allusion to the possibility of an early carcinoma of the cervix being mistaken for a hard chancre. Considerable stress is laid on the importance in all doubtful cases of syphilis of finding if possible the spirochæta pallida, and Ducrey's bacillus where there is any doubt whether an ulcer in the cervix is or is not a soft sore. The plates are well reproduced, the drawings are artistic and good, and the atlas should prove of great value both to gynæcologists and to those who are engaged more especially in the recognition and treatment of cases of venereal disease.

A Reference Handbook of Obstetric Nursing. By W. REYNOLDS WILSON, M.D., Visiting Physician to the Philadelphia Lying-in Charity. London: W. B. Saunders Company. 1907. Pp. 258. Price 6*s.* net.—Dr. Reynolds Wilson has written this handbook for the use of nurses who contemplate taking up obstetric nursing. The amount of special knowledge required in this branch of nursing is considerable and the concise description which this book contains of the special details of such nursing should prove useful. Naturally some of the recommendations are a little unfamiliar to English obstetricians, but the plan of the work is good and the author has avoided the error fairly well of including too much information and such matters as do not in reality concern the nurse. The plan of displaying in illustrations all the instruments which a nurse may have to get ready for the various operations of midwifery is a good one and enables the nurse to render herself familiar with their uses and names. We are glad to see that the author does not favour massage of the breasts in cases where they are engorged with milk and painful. This handbook is a decidedly useful little work and will be helpful to those for whom it is written.

The Operating Room and the Patient. By RUSSELL S. FOWLER, M.D., Professor of Surgery, Brooklyn Post-Graduate Medical School; Chief Surgeon, First Division, German Hospital; Surgeon Methodist Episcopal Hospital, Brooklyn, New York. Second edition, revised and enlarged. London and Philadelphia: W. B. Saunders Company. 1907. Pp. 284. Price 10*s.* net.—The favourable opinion which we expressed in reviewing the first edition of this work is equally applicable to the second edition. Several chapters have been added on the course of aseptic wounds, on the complications of wound infection, on aseptic wounds in infected tissues, on wound disturbances the result of pressure, and on wounds of special tissues. These additions certainly enhance the value of the book. One criticism we feel that we must make, the section on spinal analgesia is reprinted verbatim from the first edition, and it cannot be said to be at all representative of the present state of the method. The only spinal anæsthetic mentioned is cocaine, not a word is said of stovaine, of novocaine, or of any of the still more recently introduced spinal anæsthetics. Without wishing to exalt unduly the importance of spinal anæsthesia, we must point out that the method is widely used and deserves more attention in a work such as this.

JOURNALS AND MAGAZINES.

Journal of Anatomy and Physiology. Conducted by Sir WM. TURNER, K.C.B., ALEXANDER MACALISTER, D. J. CUNNINGHAM, ARTHUR THOMSON, and ARTHUR KEITH. Vol. XLII. Third Series. Vol. III., Part 4. July, 1908. London: Charles Griffin and Co. Annual subscription, £1 1*s.*, post free.—The contents of this number are: 1. Descriptions of Three Chinese Brains presented by Dr. F. W. Mott to the Museum of the Royal College of Surgeons of England, by E. H. Schuster, D.Sc., Fellow of New College, Oxford; with five plates. In one of these brains there were considerable differences in the weight and linear dimensions between the right and left hemispheres. 2. Tooth Vestiges and Associated Mouth Parts in the Manidæ, by H. W. Marett Tims, M.A. Cantab., M.D. Edin., Professor of Biology in the Royal Veterinary College, with 14 figures in the text. The conclusions arrived at are: (1) That the vestigial dentition of Manis (Edentata) would appear to be $\frac{3}{13\ (?)\ 14}$; (2) that the central vestiges are the largest of the series; (3) that the series does not extend as far back as the posterior margin of the hard palate; and (4) that the calcified (?) vestiges are peg-like in shape. 3. Further Remarks on Traction Epiphyses, by F. G. Parsons, F.R.C.S. Eng., lecturer on anatomy at St. Thomas's Hospital, with three figures in the text. Mr. Parsons maintains that traction epiphyses were originally sesamoid structures, though not necessarily sesamoid bones; that all traction epiphyses are to be explained by the bending and twisting of the limbs in their change from the amphibian to the mammalian posture; and that traction epiphyses only occur on the convex side of a bend. 4. A Study of the Cuboid and Os Peroneum in the Primate Foot, with 23 figures in the text, by T. Manners-Smith, M.A., M.B. Cantab., lecturer in anatomy, Downing College, Cambridge. 5. Synovial Membranes, with Special Reference to those Related to the Tendons of the Foot and Ankle, by A. G. Haynes Lovell and H. H. Tanner, St. Mary's Hospital, with four figures in the text. The authors describe the position, mode of origin, and nature of the synovial membranes of the muscles of the foot. 6. Multiple Anomalies in the Upper Extremities of one Cadaver, by Augustus Grote Pohlman, M.D., junior professor of anatomy, Indiana University. Amongst the anomalies it was seen that the right phrenic nerve arose from the fourth cervical nerve only; the left median nerve had three outer heads. The right axillary artery divided under the pectoralis minor into a superficial and a deep trunk, the superficial vessel being continued down the arm as the brachial artery. On the left the axillary artery bifurcated at the lower border of the pectoralis minor; the superficial trunk gave off the long thoracic artery and the anastomotica magna; the deep trunk split at the level of the joint into two divisions: the one passed down the arm as the second brachial artery, giving off the superior and inferior profunda, and the other split into the subscapular and anterior and posterior circumflex. There were also muscular anomalies. 7. The Fascia of the Perineum and Pelvis of the Female, with Special Reference to the Mechanical Supports of the Pelvic Viscera, by John Cameron, M.D. Edin., F.R.C.S. Eng., with 11 instructive text figures. 8. Anatomical Notes: Meckel's Diverticulum in Mammalia, by W. McAdam Eccles, M.S. Lond. 9. Persistence of the Vessels of the Yelk Sac, by Arthur Keith, M.D. Aberd. This number contains the index, title-page, and table of contents of Vol. XLII.

The Dublin Journal of Medical Science.—In the July issue of this journal Dr. Ralph S. Oldham gives an account of a case of Generalised Vaccinia in a female infant and discusses the pathology of the condition, accepting the cytoryctes variolæ as the demonstrated cause of variola and vaccinia. Mr. G. A. Hutchison writes on Calmette's ophthalmo-reaction to tuberculin, and concludes with an opinion very favourable to the employment of the test which he considers "simple, harmless, and efficient." Dr. Charles Greene Cumston of Boston discusses the pathology and

treatment of epulis, calling attention to Ritter's view that the giant cells are formed as buds from the vascular endothelium, and also to the rapid growth in these tumours that may accompany pregnancy.

The Birmingham Medical Review.—The second of Mr. Christopher Martin's Ingleby lectures is published in the June issue of this magazine; it deals with the treatment of uterine myoma. Dr. William H. Wynn writes on Treatment by Bacterial Vaccines. He states that he usually begins tuberculin treatment with a dose of 1-5000th of a milligramme and seldom exceeds that of 1-1000th of a milligramme, the administration being controlled by observations of the opsonic index. Dr. J. Jameson Evans discusses the use of tuberculin in the diagnosis and treatment of diseases of the eye. He notes that Calmette's reaction may last for several days and that "the mental and physical discomfort associated with it must not be ignored by the surgeon," and holds that the evidence as to the value of tuberculin treatment in eye diseases is not conclusive.

Review of Neurology and Psychiatry.—In the July number of this review Dr. Purves Stewart describes a case of disease of the post-central gyrus with astereognosis in a man aged 51 years. The most interesting features were the occurrence of attacks of pain in the right hand, apparently a kind of sensory "fit," and the sensory defect already mentioned, the two phenomena pointing to the localisation of a sensory area for the upper limb on the opposite side of the Rolandic fissure to the corresponding motor region. Dr. Alexander Bruce records a case resembling the spasmodic syringomyelia of Marie. Only one arm was, however, affected and the lower limbs entirely escaped, so that the diagnosis was somewhat doubtful.

LYNN THOMAS AND SKYRME FUND.

THE following subscriptions have been received between July 18th and 31st by Mr. William Sheen, M.S. Lond., F.R.C.S. Eng. (2, St. Andrew's-crescent, Cardiff), honorary secretary to the fund:—

Subscribers of Five Pounds Ten Shillings.

Gloucester Branch of the British Medical Association, per Douglas E. Finlay.

Subscribers of Five Guineas.

Edinburgh Branch of the British Medical Association, per James Ritchie.
Glasgow Eastern Medical Society, per David McRail.

Subscribers of Four Pounds Fifteen Shillings.

Northamptonshire Division of the British Medical Association, Members per P. S. Hichens.

Subscribers of Three Pounds Ten Shillings.

Sheffield Division of the British Medical Association, 18 Members per A. W. Forrest (second subscription).

Subscribers of Three Pounds.

Kimberley Medical Practitioners, per Spencer Wick.

Subscribers of Two Guineas.

Philip James, Wellington, N.Z.
Halifax Division of the British Medical Association, 15 Members, per D. J. Macaulay.

Subscribers of One Pound Eleven Shillings and Sixpence.

Beds and Herts Division of the British Medical Association, per Ernest H. Cobb.

Subscribers of One Pound Two Shillings and Sixpence.

Sevenoaks Division of the British Medical Association, per Isaac Newton, Tonbridge.

Subscribers of One Guinea.

Noel Beaumont, Port Moresby, Papua, Australia.
J. M. Chisholm, Liverpool.
E. Henderson Hunt, Secunderabad, India.
Phillips and Male, South Croydon.
D. Richmond, Rochdale.
R. Ryce, Merthyr Tydfil.
Some Indian Sympathisers, per E. Henderson Hunt.
Samuel Williams, Llanelly.

Subscriber of Half-a-Guinea.

J. W. Papillon, Brent Knoll, Somerset.

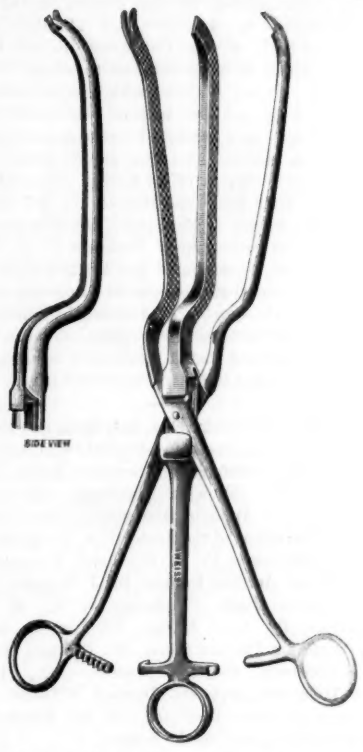
Subscriber of Five Shillings.

Davies Jones, Mountain Ash.

New Inventions.

INTESTINAL ANASTOMOSIS CLAMP.

Messrs. Weiss and Son have made for me a three-bladed intestinal clamp (vide illustration) which I have used without rubber upon the blades in cases where anastomosis had to be established upon different portions of the intestinal tract. In those cases where the stomach or intestines cannot be brought out of, or into, the parietal incision the clamps in ordinary use are often valueless, but by means of the right-angled shoulder in my clamp it can be placed effectively inside the abdominal wound. I have used it successfully



in extensive resections of the stomach, of the colon, and of the small intestine, and end-to-end or lateral anastomosis has been completed by its aid with precise juxtaposition of the parts. In cases of gastro-duodenostomy or jejunostomy where one is obliged to work under the costal angle I found it specially serviceable. In ileo-colostomy where the junction had to be made near the brim of the pelvis the handle of the clamp rested upon the left lower limb. The blades are five inches long in order to meet every possible condition of the parts to be joined together and the points are prevented from over-riding by means of points like the Gelston Atkins twin anastomosis forceps.

Cardiff. J. LYNN THOMAS, C.B., F.R.C.S. Eng.

LAKE DWELLINGS IN SOMERSET.—Mr. Arthur Bulleid, L.R.C.P. & S. Edin., of Midsomer Norton, has discovered some fields near the village of Mears, three miles from Glastonbury, to be the site of lake dwellings. The fields are marked by a number of mounds formed by the floor of the dwellings. Mr. Bulleid has commenced excavations and has found a quantity of relics in bronze, bone, horn, and pottery. The dwellings are supposed to represent a village of late Celtic date—from 300 to 400 B.C. to the Roman Conquest. Mr. Bulleid also discovered the British lake village at Glastonbury a few years ago.

THE BRITISH MEDICAL ASSOCIATION.

SEVENTY-SIXTH ANNUAL MEETING AT SHEFFIELD.

THE work of the 17 sections at the recent Sheffield gathering included the reading of many important papers followed by discussions and it is difficult to say which of them excited the greatest interest. Perhaps especial prominence should be given to the address of Professor Neisser of Breslau, for although it was nominally communicated to the Dermatological Section it was delivered at 9 o'clock on Thursday morning in the large hall of the University, so as to allow members interested in other sections to attend. The discourse, which was on syphilis, with special reference to experimental work on the subject, described Professor Neisser's admirable and prolonged research conducted upon anthropoid apes in Java. Another section which deserves special mention by reason of its having attracted a good audience to the Firth Hall—and that on the last day of the meeting—is the Section of Physiology, which engaged in a debate, under the leadership of Professor E. H. Starling, upon the Scientific Education of the Medical Student. An instructive and somewhat iconoclastic discussion followed. Previously to this the Section of Anatomy had discussed the teaching of that subject, and the two debates taken together would seem to indicate that a progressive spirit is stirring amongst the teachers of the Institutes of Medicine.

On the afternoon of Wednesday, July 29th, the University of Sheffield held a convocation at which Sir Charles Eliot, the Vice-Chancellor, conferred the honorary degree of Doctor of Science upon the following gentleman, who were presented by Professor Appleton, the public orator: Professor Simeon Snell, President of the Association, Dr. Henry Davy, ex-President, Professor C. J. Bouchard, Professor John Chiene, Professor Antoine Depage, Dr. J. Kingston Fowler, Professor Ernest Fuchs, Professor J. M. M. Lucas-Championnière, Dr. C. J. Martin, Professor J. Benjamin Murphy, Professor Thomas Oliver, Mr. Edmund Owen, Sir Henry Rosborough Swanzy, president-elect, Professor Hermann Tillmanns, and Dr. Dawson Williams. After the ceremony Professor Bouchard and Mr. Edmund Owen spoke in acknowledgment of the honour.

The arrangements which were made by Sheffield and the neighbourhood to entertain the visitors were on an extensive scale and the perfect weather conditions enabled them to be enjoyed to the full. The chief reception took place on the evening of Wednesday, July 29th, when the Lord Mayor, Master Cutler, and citizens received the Association in Weston Park adjoining the University. The grounds were illuminated with excellent effect and entertainment was provided by members of the local Territorial Forces, who performed a torchlight tattoo, by a band of Neapolitan musicians and singers, and by a magnificent display of fireworks. Nearly 3000 persons were present and the park was brightened by many doctors' scarlet robes and other academical costumes.

During the week garden parties were given by Sir Joseph and Lady Jonas, Mr. and Mrs. Franklin, Mr. and Mrs. Laycock, Mr. and Mrs. Samuel Doncaster, Mr. and Mrs. C. D. Leng, Mr. Samuel Roberts, M.P., and Mr. and Mrs. Fred Kelly at their respective residences. Visitors to Mr. and Mrs. Leng at Sandygate had the opportunity of visiting a model dairy. Many Sheffield manufacturers threw open their works to inspection, including Messrs. Vickers, Sons, and Maxim, whose visitors saw an armour plate for H.M.S. *Vanguard* rolled, and inspected the steel melting works, the forges, and the gunshops; Messrs. Walker and Halls; Messrs. John Brown and Co.; Messrs. Thomas Firth and Sons; Messrs. Cammell, Laird, and Co.; Messrs. Mappin and Webb; and other firms. The proprietors of the *Sheffield Daily Telegraph*, which published admirable accounts of the Congress, held a reception at which the printing of their evening paper was shown.

Thursday was a day of feasting. It began at 8 A.M. in the Cutlers' Hall, when at a breakfast provided by the National Temperance League Sir William Clegg presided and was supported by Sir Victor Horsley, Dr. T. N. Kelynack, Dr. Alexander Scott, Professor E. H. Starling, Alderman J. W. Wilson, Mr. J. C. Clegg, Dr. A. T. Schofield, Dr. Helen Wilson, Mr. E. M. Wrench, and others. Speeches were made in support of the League's objects, Sir Victor Horsley's taking a direct political turn in relation to the Licensing Bill.

The annual luncheon of the Continental Anglo-American Medical Society was held at the Royal Victoria Station Hotel on Thursday. Owing to the unavoidable absence of Professor W. Osler, F.R.S., the chair was filled by Sir Malcolm Morris. In proposing the toast of "The Prosperity of the Society," the chairman referred to the excellent work which it was doing and particularly that which enabled English physicians to select the right man for the treatment of their patients when advised to go abroad. Dr. Leonard N. Robinson, the honorary secretary of the society, acknowledged the toast and expressed his regret that he was about to resign his secretaryship. Dr. W. Ewart expressed, on behalf of the guests present, the warmest thanks for the hospitality extended to them, after which the proceedings terminated.

The annual dinner of the British Medical Association was held in the evening of Thursday in the large banqueting hall of the Cutlers' Company of Sheffield, around the walls of which hang the splendid portraits of famous citizens and noblemen connected in the past with the city; and the ample space of the hall was taxed to its utmost by the numerous company present. Professor Simeon Snell, the President of the Association, was unfortunately unable through indisposition to occupy the chair and his place was worthily filled by Dr. Sinclair White. After the loyal toasts had been duly honoured, Mr. A. J. Hobson proposed "The Imperial Forces." This was acknowledged by Fleet-Surgeon A. Kidd, R.N., who contrasted the present position of surgery in the navy with that of the past. Lieutenant-Colonel E. M. Wilson, R.A.M.C. (retired), replied for the army and pointed out that the military forces looked to the civilian element to perform its duty in the defence of the nation. Lieutenant-Colonel J. W. Martin acknowledged the toast on behalf of the Territorial Army. Sir Henry Swanzy then proposed the toast of "The City of Sheffield," and thanked the citizens for the lavish hospitality with which they had entertained the British Medical Association. This was responded to by the Lord Mayor of Sheffield. He described the great work done by the city in looking after the health of the people and referred to the modern methods adopted by the citizens for the disposal of sewage. The Master Cutler also replied to this toast and remarked on the efforts being made to improve the sanitary conditions of workshops, adding with pardonable pride that the workmen themselves and the various trade unions were doing all they

could to help the employers to prevent disease in the factories. Dr. H. Davy, the retiring President of the Association, submitted the toast of "The University of Sheffield," which was replied to by Alderman Franklin, the pro-Chancellor of the University. Professor Tillmanns of Leipsic gave the toast of "The British Medical Association," which was replied to by Dr. J. A. Macdonald, who observed that the Association had for its great object the combating of disease and the advancement of the good of humanity. Professor E. H. Starling, in a neatly worded speech, submitted the toast of "The President of the Association." Then came Professor R. J. Pye-Smith who gave the toast of "The Guests," which was responded to by Mr. J. Scott-Fox and Professor Bouchard, Professor Depage, Professor Fuchs, Professor Tillmanns, Professor Mangiagalli, and Dr. M. Richardson. The proceedings terminated with the health of the Chairman, Dr. Sinclair White, proposed by the Master Cutler, which was suitably acknowledged. Whilst the dinner was in progress a spirited performance of "Much Ado About Nothing" was given at the Lyceum Theatre before a packed audience, chiefly consisting of ladies, by the Sheffield branch of the British Empire Shakespeare Society, assisted by Miss Constance Collier and Mr. Henry Ainley.

The offertories at the parish church at the service attended by the Association on July 27th and at that held simultaneously at St. Marie's Roman Catholic Church were divided between the British Medical Benevolent Society, the Royal Medical Foundation of Epsom College, and the West Riding Medical Charitable Society.

The last official functions of the week were the popular lecture on Dust and Disease delivered by Mr. Edmund Owen on Friday evening and the reception in the Cutlers' Hall by the President and local members of the British Medical Association which followed it.

On Friday and Saturday long-distance excursions were organised to York, Harrogate, Matlock Bath, Chatsworth, and Scarborough. A large party visited Sherwood Forest and enjoyed the hospitality of the Duke of Portland, the Duke of Newcastle, and Earl Manvers at Welbeck Abbey, Clumber, and Thoresby.

Another interesting and well-organised excursion on the Friday was to Buxton, to which town the Midland Railway provided a special train. Some 200 travelled by it from Sheffield and were received by the local medical reception committee and Mr. John Hatton, general manager of the Thermal Springs and Baths, which the Buxton council purchased a few years ago from the late Duke of Devonshire. The visitors were entertained to luncheon most hospitably at the Empire Hotel, Mr. A. Brown being in the chair. Mr. W. Armstrong, in welcoming the members of the Association, spoke of Mr. Thomas Ryan's recent researches into the radio-activity of Buxton water, suggesting that therein might lie the secret of their curative properties. Sir Havelock H. R. Charles replied for the visitors. After luncheon the party visited the bathing establishment under the guidance of the medical committee. The swimming and immersion baths, the moor baths, in which peat replaces the German use of mud, the Fango volcanic mud baths, the douche-massage and spray rooms, and the electrical department were inspected in turn, and the appliances were seen to be all of an excellent order, the immersion baths being especially notable for their size and brightness. Our representative is much indebted to Mr. G. H. Thompson for the courtesy which he extended to him during this brief visit to a spa which deserves wider recognition from English medical men.

Elaborate arrangements were made to enable members of the British Medical Association to play golf during their stay at Sheffield. Thanks to the energy and foresight of Dr. A. L. Husband the numerous golf clubs about Sheffield courteously placed their courses at the disposal of the medical visitors and a great number of members availed themselves of the facilities offered. Dr. Husband was personally very busy all the week arranging matches at the different clubs and generally advising and helping players. Apart from the smaller events which took place the golfing interest centred in the match which was played at the Lindrick Links close to Sheffield between representatives of Scotland and the North against the rest of the world. The match took place on July 31st and resulted in a win for Scotland and the North by 11 matches to 7, the details being as follows:—

Scotland and the North.		The Rest.	
Ralph Lamb (Woolston)	1	J. F. Carruthers (R. Guernsey)	0
G. L. Chiene (New Lufness) ...	1	A. Lucas (Harborne)	0
A. L. Husband (S. and D.) ...	1	R. M. Fraser (Knock)	0
H. Jeffries (Bolton)	½	Watson Williams (Bristol and Clifton)	½
W. T. Ritchie (Barnton)	0	Kenneth Goadby (Walton Heath)	1
A. D. Fordyce (Bruntesfield) ...	0	Herbert Tilley (London)	1
D. Chalmers Watson (Murrayfield)	0	L. E. Creasy (Le Touquet) ...	1
A. H. Griffiths (Manchester) ...	1	C. L. Starr (Toronto)	0
Sinclair White (S. & D.)	½	Guy Elliston (London)	½
W. Overend (Hallamsh.)	0	Thos. Brown (Mitcham)	1
J. McKinnon (S. & D.)	1	E. V. Phillips (Kibworth)	0
D. M. Clarke (S. & D.)	1	F. M. Pope (Leicester)	0
A. R. Fordyce (N.E. Derbys.) ...	1	R. Langdon Down (Richmond)	0
Andrew Robertson (Prestwich and St. Nicholas)	1	F. W. Edridge-Green (Hendon)	0
A. Fullerton (Belfast)	½	Alex. Dempsey (Newcastle, co. Down)	½
M. R. Clarke (S. and D.)	0	H. S. Paterson (Berkhamstead)	1
G. Mathieson (S. and D.)	½	E. L. Thornton (Exmouth) ...	½
E. S. Morton (Abbeydale)	1	C. E. Elliston (Ipswich)	0
Total	11	Total	7

We have not space to describe at greater length the official and social proceedings of the week, but we think everybody who attended the meeting will acknowledge that owing to its excellent organisation, to the hospitality of Sheffield and of its University, and to the beauty of the districts within easy reach of the town, the Seventy-sixth Congress of the British Medical Association has been, in spite of Sheffield smoke, an entirely successful and memorable gathering.

THE SECTIONS.

MEDICINE.

THURSDAY, JULY 30TH.

Discussion on the Etiology of Degenerative Changes of the Aorta.

Dr. G. NEWTON PITT (London), in opening this discussion, alluded to the circumstance that advanced degeneration might be present in a small part of the aorta, probably owing to a local infection, while the remainder was perfectly healthy; also to the fact that with the aorta healthy the peripheral vessels might be atheromatous or *vice versâ*. Atheroma and arterio-sclerosis were quite distinct diseases. Atheroma of the aorta was not a single process but the result of a number of different causes and processes. The atheromatous changes might result from infection from within. It was certainly unusual, however, to have aortic changes from the acute infectious diseases—the protection was so good. Pyrexia was often associated with the development of atheromatous changes in the aorta. High blood tension and strain were possible causes, but at least half the cases of aortic degeneration were not associated with hypertrophy of the heart. In cases, however, with other primary causes these might be secondary causes. Atheroma in the pulmonary artery was practically limited to conditions, such as mitral stenosis, in which the pulmonary arterial blood pressure was increased. Reference was then made to the tendency of atheromatous patches to increase.

Were the changes in the intima primary or secondary? Reasons were given for considering that the intimal changes might be protective. The nutrition of the intima might be adversely affected by changes in the middle coat and in the adventitia, particularly by interference with the vasa vasorum. In regard to senescence, atheroma occasionally occurred in the very young, therefore this could not be the only cause. Many of the most aged, moreover, had perfectly healthy vessels; it seemed to be a question of the greater frequency of exposure to infection occurring in the longer life. Inoculation with organisms failed, however, in animals below a certain weight; thus system changes, as from age, seemed to be in them a necessary antecedent. It was not at present possible to classify the causes of atheroma of the aorta. Of the quite early cases, in the early months or years of life, most were due to syphilis and usually to congenital syphilis. Of other degenerative changes beyond atheroma fatty changes were of importance, but these were not more frequent in the aged than in the young and it was a question whether they did not develop into atheroma. Changes due to adrenalin and increased pressure in the aorta, experimentally produced, were quite distinct from atheroma: they were of the nature of acute calcareous degeneration of the media. Little was definitely known as to the influence of sex and race in the development of atheroma. Occupation had influence chiefly from its strenuousness but probably too from the results of sedentary habits. Diet and defective metabolism, as in gout, were contributing causes in the development of atheroma; the toxic effect was probably the main factor. In regard to the production of aneurysm, syphilis rather than atheroma was probably the most important cause, syphilis being traceable in 70 or 80 per cent. of the cases. The process was the giving way of a scar tissue following on a gummatous deposit. Many cases of aneurysm showed no evidence of high arterial pressure, but it was obvious from the fact that aneurysm occurred in animals that syphilis was not an absolutely essential factor. Reference was made to the experimental production of degeneration of the middle coat of the aorta by pressure on the abdominal aorta. As life increased the lumen of the aorta increased and this was due to degeneration (not atheromatous) of the middle coat. From infections acute aortitis might occur which might lead later to atheromatous changes. The significance of pyrexia in such cases was pointed out. As to the experiments with adrenalin the changes induced were not purely the result of high pressure, inasmuch as the necrosis of the muscle fibres and even aneurysmal patches occurred if a nitrite were given at the same time. True atheroma had not yet been quite clearly set up by experiments, although the inflammatory changes produced simulated it. By using non-virulent organisms and giving a long time for the experiments changes closely resembling, if not identical with, those of atheroma had been found in the media in animals. Atheroma did not occur with the specific fevers, but in some slowly infective process, as from staphylococcus albus or bacillus coli, it was more likely to follow when there were superadded the changes of senescence.

Professor C. J. BOUCHARD (Paris) gave statistics derived from his observations on 4000 cases of chest disease examined for the purpose of deducing the relations of angina pectoris. Among these 83 had angina and he had expected to find that the majority were syphilitic, but, as a matter of fact, 12 only were clearly so. His figures were: 12 cases of angina in 261 syphilitics, more than 4·5 per cent.; and 71 cases of angina in 3739 non-syphilitics, less than 2 per cent. Of the 71 cases some 38 showed evidence of aortic disease. The syphilitic lesions of the large arteries were not unamenable to treatment; he had seen in seven cases the disappearance of an aortic murmur. The treatment which he had adopted was the injection of mercurial solutions, preferably in the vicinity of the affected artery.

Sir LAUDER BRUNTON (London) referred to the combined influence of a general infection and a local cause in arterial degeneration. In default of any scientific basis for the treatment of the states of defective metabolism, gouty and other, it was necessary to fall back on the observed effects of medicaments. Atheroma of the larger arteries was a distinct condition and was apparently producible by experiment. Not only adrenalin but also barium, digitalis, and tobacco might not only produce a rise in blood pressure but also directly aortic changes. It was important therefore to keep the blood tension low. In India the blood pressure seemed, according to his observations, to be lower than in this country, and in Canada, also according to his observations, higher. A useful way of keeping the blood pressure down was by administering a mixture of nitrate and nitrite. In elderly people high tension often manifested itself by epistaxis, which itself could be obviated by such treatment. He gave the remedy in doses of half to five grains of nitrite of soda with 20 grains of nitrate thrice a day. If it were desired to reduce the pressure quickly nitroglycerine was preferable. Potassium iodide with saline and mercurial purgatives should also be given. Thus the changes of old age he believed might be warded off and life prolonged for five or ten years.

Sir JAMES BARR (Liverpool) gave an account of his views of the causation of aortic degeneration, insisting especially on the influence of intermittent strain in producing it. There should, he maintained, be but little difference between the systolic and diastolic blood pressure for the preservation of the arteries. The influence of heredity was insisted on.

Dr. W. RUSSELL (Edinburgh) said it was not necessary to have degenerative changes in the aorta even when there was great difference between the systolic and diastolic pressure as in aortic incompetence. He adhered to the infective origin of atheroma.

Professor W. OSLER (Oxford) repudiated the implication of Sir Lauder Brunton on his country. He would himself say that the British blood pressure was higher than the Canadian. He wished especially to discuss the influence of acute infections in the production of aortic lesions. It was probable that too much importance was attached to small aortic lesions in typhoid fever, scarlet fever, measles, and pneumonia. In rheumatic fever the affair was different—the resulting endoaortitis was serious. The only infection that was of much moment in producing aortic lesions was syphilis, and that in three ways—in producing aortic insufficiency in young men, as a frequent cause of angina pectoris in young syphilitic men, and in the production of aneurysm in young men due to a split in the intima over a small area as a result of sudden strain. The other type of aneurysm occurred in older people and was atheromatous. The importance of the matter was wrapped up in the early and thorough treatment of cases of syphilis.

Sir JOHN BROADBENT (London) referred to the relation of atheroma and aneurysm and to the effect of syphilis in producing aneurysm, but considered that intermittent strain was responsible for a certain number of cases apart from syphilis. The rarity of degenerative changes in the aorta in chronic interstitial nephritis was remarkable. The changes in the peripheral vessels in that condition were not degenerative but hypertrophic and the vessels mainly affected were those in the brain. The experimentally induced strain was hardly comparable with the prolonged strain, as seen, for example, in chronic Bright's disease. The vasa vasorum were of great importance in this relation, as in syphilis with the endarteritis obliterans affecting these vessels the intima became diseased, probably because furthest from the blood-supply. In the toxic cases the toxins were probably directly destructive of the tissues they had affinity for. The primary change was degenerative and manifested by a large amount of cellular leucocytic infiltration In some cases vessels might be found penetrating the media, an abnormal circumstance, probably the result of the attempt at repair of a degenerative process following on infection.

Dr. PITT, in reply, thought the important point was that when once a spot of aortic damage occurred that became vulnerable to infection. It was to be remembered that aneurysm was much more common in herbivorous animals than in carnivora, a fact having a significance on the influence of nitrogenous diet. The chief cause in herbivora was the presence of parasites.

Dr. RUSSELL read a paper on

The Influence of the Arterial Wall in the Clinical Hæmomanometric Estimation of Blood Pressure,

showing that a thickened vessel wall gave misleadingly high manometric readings. His paper was illustrated with numerous lantern slides.

Dr. OTTO F. F. GRÜNBAUM and Dr. W. O. PITT (London) communicated a paper entitled

An Attempt to Prevent the Adhesion of the Pleura after Inflammation.

It had been long recognised that tuberculosis frequently followed an attack of pleurisy and in all probability the

diminished aeration of the apices of the lungs was partially responsible for this. It had been shown by Keith and other observers that when the two layers of the pleura were adherent the lungs were unable to glide into the thoracic cavity and air failed to enter the extreme apices of the lungs. Various methods had been adopted with the idea of keeping the pleura apart until the inflammatory condition had subsided; air had been injected but so far evidence had not been forthcoming that this method had prevented the adhesions. It occurred to one of them several years ago that it might be possible to introduce some material into the pleural cavity which would be harmless and be but very slowly absorbed, and that if this spread over the whole surface of the pleura in all probability adhesions would be prevented. After making a series of experiments upon animals with liquid paraffin of the British Pharmacopœia they had carried out this treatment upon some few cases with distinctly promising results. Staphylococci and aleuron were also used as an injection in guinea-pigs for the purpose of producing inflammation and it seemed that the simultaneous injection of paraffin diminished the formation of adhesions.

Sir JAMES BARR said that he had used the method for several years and, as he believed, with good results. He would inject air at the same time.

Dr. RUSSELL asked whether recovery of the pleural surface without adhesions could occur when the serosa was destroyed.

Dr. PITT said that he had seen absolute recovery of the pleural surface, smooth and without adhesions, after empyema.

Dr. GRÜNBAUM said that complete recovery occurred in joints after pneumococcic inflammation.

Dr. M. PARRY-JONES (Derby) gave a paper on

Some Cases of Pneumothorax,

arguing that the prognosis, even in association with tubercle, was not so grave as was frequently considered.

OBSTETRICS AND GYNÆCOLOGY.

WEDNESDAY, JULY 29TH.

The following discussion ensued on Dr. G. E. Herman's address on

Uterine Displacements.

Professor S. POZZI (Paris) thanked the audience for allowing him to speak in French. He wished to present a few general remarks on the displacement of the uterus and the results of his experience of the various operative treatments. 1. The mechanical lesion due to displacement was not the only cause of the symptoms in most cases. One must commence by curing the other pathological factors by an appropriate treatment, such as treating diseased tubes, endometritis, ruptured perineum, and often after treatment of these complaints the patient was entirely or greatly relieved. But in many cases it was necessary to correct the misplacement to get a complete recovery. The pessary should be used as much as possible as a temporary treatment. 2. Shortening of the round ligaments (Alexander's operation) was a very good operation when applied in the proper cases, the great advantage of this treatment being that it did not interfere with pregnancy. This operation was of no use when the appendages were diseased or the abdominal walls were relaxed. 3. Ventrofixation of the uterus should only be performed after the menopause because it exposed the patient to the risk of miscarriage and dystocia. When it was not advisable to shorten the round ligaments in young women Professor Pozzi advised (4) intra-abdominal shortening of the round ligaments. In almost every case colpoperineorrhaphy was necessary as a preliminary operation.

Professor L. M. BOSSI (Genoa), speaking in French, said that the various operative treatments devised for misplacement of the uterus were always uncertain and sometimes dangerous and he had come to this conclusion from personal experience of the various operative methods suggested. He had operated in many hundreds of cases, but he thought that treatment without surgical operation was more useful when possible. He desired to speak more especially on what he called the functional treatment of displacement. Cases of displacement during pregnancy were more frequent than was thought; many cases of miscarriage were due to this. The application of a Hodge pessary directly the misplacement was diagnosed would prevent miscarriage; after birth the displacement would very likely be cured if the Hodge pessary was used for two months. Students and young gynæcologists should be taught never to leave off attending their patient after a confinement without examining the position of the uterus. With regard to another question, after many years of clinical experience, Professor Bossi said: (1) he had seen many girls suffering from anæmia and nervous troubles due to a serious anteflexion of the uterus of congenital origin and that with correction of the flexion the patients became quite well; and (2) many cases of sterility due to congenital flexion could be cured by his method of treatment which consisted of curetting, incising the cervix at the point of flexion, and the introduction of a stem pessary which was left in for 20 days. After five years' experience he had had the best results.

Dr. RIDDLE GOFF (New York) said that many patients suffered more from a sore brain than a sore womb. Meddlesome gynæcology was as bad as meddlesome obstetrics. The uterus was supported by its ligaments, not by the pelvic floor. All the other organs were suspended by their ligaments. Weight for weight, no other organ in the body had so many ligaments. When the support of the pelvic floor was destroyed, as in a complete rupture, the uterus remained in place. Uterine displacements were frequently found in virgins with no injury to the pelvic floor. In America there had been a great reaction against the use of pessaries.

Dr. MAY THORNE (London) thought that many cases of displacement were due to neurasthenia. She uttered a word of warning against allowing young girls to take too much exercise, especially during the period, as she had found in several cases that backward displacement had resulted.

Dr. J. B. HELLIER (Leeds) was generally in agreement with Dr. Herman. He spoke only of extreme cases of procidentia, and thought that in these cases pessaries were of great value when suspended from the waist.

Dr. INGLIS PARSONS (London) said that in the more serious cases of rupture of the perineum perineorrhaphy entirely failed to keep up the uterus and it was to meet this condition that he devised his operation of injecting the broad ligaments with quinine. The operation took but a few minutes and caused no after pain. It succeeded in the worst cases of prolapse when no other operation would do any good. The inflammatory reaction after injection was not so active in pale anæmic women as in florid healthy women. He had performed his operation in 150 cases and in 90 per cent. he had had a successful result. In cases of retroflexion if pessaries failed to relieve he advised ventro-suspension after Kelly's method.

Dr. ARNOLD W. LEA (Manchester) said that a large number of cases of prolapse were due to relaxed abdominal muscles, many of the symptoms being due to ptosis of the viscera. A good method of treatment was gymnastic exercises. In uncomplicated cases of retroflexion the shortening of the round ligaments was a successful operation. In ventrofixation the uterus should be fixed low down on its anterior surface; this would prevent difficulty with labour. He had done ventrofixation in 115 cases with one death from intestinal obstruction.

Dr. A. DONALD (Manchester) confined his remarks to the treatment of mobile retroversion. Why in some cases did displacement cause symptoms and in others not? The solution of this problem was in the fact that the symptoms depended upon whether the uterus was healthy or not. The commonest symptom due to this displacement was that of a feeling of sinking in the epigastrium; all other symptoms were due to disease of the uterus. Most treatment of retroversion and retroflexion was directed to the misplacement and not the cause. Pessary treatment was purely a faith-cure; ventrofixation was a fad which had all the glamour of a major operation and was "done to death." The proper treatment was to get the uterus into a healthy condition. Curette the uterus and its size would diminish and nearly all, or all, the woman's troubles would vanish.

Dr. CUTHBERT LOCKYER (London) confined his remarks to the treatment of five conditions: 1. A mobile uterus with backward displacement, in which no treatment was required unless that of endometritis and sub-involution. 2. A fixed uterus with backward displacement. In this case a laparotomy should be done, the adhesions freed, and the uterus ventro-suspended. 3. Tubal disease with backward displacement. Remove diseased organ and ventro-suspend. 4. Gravid

uterus with backward displacement. Manual reposition and insertion of a ring pessary. 5. Descent of the uterus. If little no treatment, but special regard should be paid to prophylaxis after labour; if severe and extensive colporrhaphy after a special method which he had devised should be carried out.

Dr. F. J. MCCANN (London) endorsed what Dr. Lea had said about the value of exercises for prolapse and had prescribed them for many years. In bad cases of procidentia he amputated the cervix high up and removed the mucous membrane and subjacent tissues down to the bladder and rectum in the neighbourhood of the vaginal vault.

Dr. T. ARTHUR HELME (Manchester) welcomed Dr. Herman's address as a timely protest against a too pronounced tendency towards operative interference; he recalled a graphic picture drawn by an American surgeon at the Toronto meeting, the approach to whose office was occupied by lines of women awaiting in turn the removal of their appendices or the "fixing up of their womb," with the object of being in the fashion! We had not reached that stage in this country. Unfortunately the present state of our knowledge of the physical explanation of the uterine support was such that it was not possible to dogmatise and was such that men were entitled to hold very divergent views as to the pathology and treatment of uterine displacements. All must agree that general treatment by rest or the opposite—i.e., exercise and gymnastics—was of the highest importance and he would at this point wish to refer to the question of prophylaxis. Dr. May Thorne had already alluded to the possibility of acute displacements in school-girls. In his experience Dr. Helme had been struck by the frequency of occurrence in young women and girls of definite local pain and discomfort, in whom on examination a retroversion or flexion was discovered and he had also been struck by the frequent association of tenderness and shortening of the (in his experience) left utero-sacral ligament especially. He had quite satisfied himself of the occurrence of acute displacements in virgins, the probable cause being excessive violence in games or excessive strain in work, and he was satisfied that constipation and want of regular attention to the state of the bowels in school-girls played an important part in the causation of these two conditions. As to local treatment, this in the present state of our anatomical knowledge was largely empirical; there was still a place for the proper use of pessaries, but in many cases operation was indicated. Dr. McCann had alluded to the multiplicity of operations, and it seemed to him that the choice of operation must depend chiefly on the individual preference and style of the surgeon. The subject was too large to discuss and he would allude merely to the results of his own experience in two conditions: 1. Mobile retroversion or flexion. In these cases he had found Gilliam's operation—i.e., shortening of the round ligaments—to be eminently useful and satisfactory: it had none of the associated risks of ventrofixation and in his opinion approached most closely to the ideal operation. It was a simple operation, took only a few minutes, and left the uterine body perfectly free. If any members of the section had not adopted it to them Dr. Helme would recommend the operation. 2. Procidentia. In these cases he had come to select the operation according to the size of the uterus—the degree of hypertrophy of body and cervix: (*a*) In those cases where the uterus was hugely enlarged, e.g., from 4½ to 6 inches long, he preferred to extirpate the uterus. The results of the operation depended on the method. He had seen cases where the extirpation had done no good, the only result being that at the apex of the protruded mass a scar was seen instead of the uterus. In fact, the extirpation of the uterus was merely an incident in the operation, *not* the object. The chief object was to bring together the divided ligaments so as to form a firm cicatrix, and if this was done it had been his experience that the operation was a useful one. (*b*) Where the uterus was moderately enlarged he selected the high amputation of the cervix, removing a wide area of vaginal skin from the upper end of the canal, together with colporrhaphy and repair of the outlet. (*c*) Where the uterus was small, it was a shorter and simpler procedure to perform abdominal fixation together with repair of the outlet. These were merely the expressions of his own experience and the two points he would emphasise were the value of Gilliam's operation and the importance of sudden strain and want of attention to the bowels as factors in the causation of pelvic trouble.

Dr. C. HUBERT ROBERTS (London) agreed with Dr. Herman's remarks on the neurasthenic aspects of displacement and thought that women should not be told what was the matter with their genital organs, but that their general symptoms should be treated. He still used pessaries and thought that if they were used carefully and kept clean no trouble resulted. Ventrofixation was good in old women.

Dr. W. E. FOTHERGILL (Manchester) confined his remarks to downward displacements. The fact that most women with prolapse had large lax vaginal outlets did not prove that the laxity was the cause of the prolapse any more than the fact that large men wore large waistcoats proved that loose clothes increased the size of the chest. The one pathological condition found in every case of prolapse was elongation and relaxation of the connective tissue attachment between the uterus, vagina, and bladder and the inner and the upper surface of the pelvic diaphragm. Three classes of cases must be considered: (1) if the pelvic outlet was torn or stretched, the connective tissue attachments of the viscera remaining perfect, no prolapse followed; (2) if the attachments were relaxed and elongated, the pelvic outlet being perfect, the loose viscera probably became prolapsed and *en route* dilated the pelvic outlet (prolapse in virgins); and (3) if the viscera were loosened and the pelvic outlet also torn or stretched the loose viscera quickly became prolapsed (prolapse in parous women).

Dr. R. C. BUIST (Dundee) deprecated the isolation of one factor in the complicated dynamical problem of uterine equilibrium and its selection as the cause of displacement. Those who selected the perivascular tissue alone were as far in error as those who rested their whole faith on the perineum, while the belief that the uterus was supported only by its ligaments, which had been affirmed in the discussion, raised considerable intellectual difficulties in the problem of flotation of a balloon.

Professor BOSSI read a paper in French on

The New Treatment of Osteomalacia and Rachitis and the Influence of the Suprarenal Glands on the Skeleton.

The pathogenesis of osteomalacia was not yet known and Professor Bossi considered that the relationship between the ovaries and suprarenal glands might have something to do with the disease and up to date the results of his experience had been good. In four cases of osteomalacia during pregnancy he had noticed the rapid diminution of osteomalacic symptoms and in three cases he had prevented the necessity for Cæsarean section. The dose employed was 0·5 cubic centimetre of suprarenal gland in the morning and 0·5 cubic centimetre in the evening (Parke, Davis, and Co.). Radiographs taken before the treatment had demonstrated an osteoporosis which had disappeared after the treatment. Professor Bossi had removed the suprarenal gland on one side in a sheep and obtained an experimental osteoporosis. He believed that the suprarenal glands had an important influence on the ossification of the skeleton and that rachitis could be cured by the administration of adrenalin and he had several cases proving this.

Dr. CUTHBERT LOCKYER read a paper on

The Displacement of the Ureter in Certain Cases of Pelvic Tumour.

Solid retroperitoneal tumours, parametric cysts, and carcinoma of the uterus were the most likely tumours to displace the ureters, though, strictly speaking, in the case of carcinoma the ureters were always in relation with the cervix uteri and were merely displaced by the growth of the cervix, even when the parametrium was infiltrated with solid cancerous growth. Dr. Lockyer had found the ureter taking its normal course with the pelvis blocked by carcinoma spreading from the cervix. In one particular case the right ureter above the point of entry into the ureteric canal was of the size of an umbilical cord. Burrowing cysts influence the position of that segment of the ureter which lies between the cervix and the bladder; this they might depress, elongate, or stretch, or the ureter might be raised secondary to the raising of the bladder. Between the cervix and the brim of the pelvis broad ligament cysts depressed the ureter. A burrowing fibroid might displace the whole pelvic segment of the ureter and in such a case Dr. Lockyer had divided both ureters, removed the right kidney, and sewed the left ureter into the bladder; the patient made a good recovery and had followed her occupation in perfect health for the last three years. Dr. Lockyer had also divided the ureter in two cases of Wertheims'

operation for cancer of the cervix. In one case the patient died from secondary hæmorrhage 23 days after the operation due to sepsis, consequent upon the cut end of the ureter being left open and *in situ* without attempted implantation. In the second case the ureter was implanted in the bladder and the patient recovered. Dr. Lockyer had also divided the ureter in a case of diseased appendages. The corresponding kidney was removed and no drain in the loin was employed. Three weeks later a lumbar abscess formed and after drainage the patient made a complete recovery. In 264 consecutive abdomino-pelvic operations Dr. Lockyer had divided the ureter four times. No doubt surgical successes formed interesting reading and were instructive, whilst surgical mishaps were to be deplored; nevertheless, they might prove equally instructive, and for this reason Dr. Lockyer wished that they were more often recorded.

THURSDAY, JULY 30TH.

Professor R. JARDINE (Glasgow) opened the special discussion on

Cæsarean Section versus other Methods of Delivery in Contracted Pelvis (Symphysiotomy, Pubiotomy, Craniotomy, and Induction of Labour).

He said that the remarks he had to make were based upon the very large experience he had gained during the 12 years he had been a physician in charge of the Glasgow Maternity Hospital. In that hospital these operations were so common that some of them were performed every week. He had once had to perform Cæsarean section three times inside of 14 hours. On deciding as to which operation should be done the experience of the operator had to be taken into account, and also the environment as well as the condition of the patient. An expert had a free choice of all the operations, but the major part of midwifery was in the hands of general practitioners who could not be experts in the more difficult operations, and if they had to face the operation alone they would have to do the best they could for the mother even if it meant sacrificing the child. The mother's claims were paramount but the unborn babe, too, had claims which could not be disregarded. By Cæsarean section performed at a suitable time and in a suitable environment both lives could generally be saved, but if the patient lived in a poor house where she could not be properly nursed a Cæsarean section would probably be contra-indicated. Under such conditions a craniotomy or induction of labour might be feasible. Cæsarean section was a very easy operation to perform and if the surroundings of the patient were good and strict aseptic precautions were taken the risk to the mother was very little greater than the risk of a difficult forceps delivery, provided the operation was performed before labour had commenced or early in the first stage of labour. When the patient had been a long time in labour, and more especially if she had been examined carelessly or if attempts had been made to deliver her, then there was considerable risk. If attempts had been made to deliver in the usual haphazard way he would not do a section unless it were impossible to deliver through the pelvis. If forced to operate he would remove the uterus. With a 2½ inch conjugate or less Cæsarean section should be done, as delivery of an ordinary sized child through the passages by craniotomy should not be attempted. With a pelvis of from 2½ to 3½ inches the child might be born alive by natural efforts provided its head was of the right shape and presented with the anterior parietal bone in advance. The size of the head relative to the size of the brim of the pelvis should always be taken into account. He narrated several cases which illustrated this. If in addition to the flattening of the pelvis there was general contraction then Cæsarean section would be necessary much more frequently. While he was a strong advocate for section he did not for a moment urge that it should always be done in preference to any of the other operations. There was a legitimate field for all of them. He referred to the question of sterilising the patients. If the woman knew this could be done she would be almost sure to demand it and if the husband also wished it Professor Jardine gave effect to their wishes by tying the Fallopian tubes and cutting about an inch out. In his hands this had never failed. In all the cases in which he had had to repeat the operation he had sterilised the woman at the second operation. Unmarried women he did not sterilise unless there was a special reason. Professor Jardine then considered symphysiotomy and pubiotomy together. He preferred the pubiotomy as there was less risk of injuring the bladder. Sir William Macewen of Glasgow had suggested pubiotomy years before Gigli and had offered to do the operation in the Glasgow Maternity Hospital, but an opportunity had not been afforded him. Professor Jardine was not much in favour of these operations, but still there were cases in which they were to be preferred to Cæsarean section in the interest of the mother, but the risk to the child was always considerable. With a section there was no risk to the child. If there was much disproportion between the size of the child's head and the brim of the pelvis these operations were contra-indicated. If the true conjugate were below three inches they should not be done unless the child's head was very small. A conjugate of about three and a half inches with an ordinary-sized head gave a suitable case. If there was much general contraction as well as flattening, in the interests of the child he was not in favour of the operation. If a woman had been long in labour, and especially if attempts had been made to deliver her, then he would perform one or another of these operations in preference to a Cæsarean section, provided the disproportion between the head and the pelvis was not too great. He considered that either of these operations, especially symphysiotomy, as no special instruments were required, could be performed by a general practitioner who might not care to attempt a Cæsarean section. The size of the pelvis was usually slightly increased and subsequent deliveries might be possible without a cutting operation. The operation could be repeated. He had done symphysiotomy three times on one woman. At the second and third operation there was practically no bleeding. Craniotomy was the operation of selection when the child was dead and the mother's pelvis large enough to allow of the use of instruments. Professor Jardine maintained that under certain conditions craniotomy on a live child was justifiable. If the conditions present were such that an operation to save the child could only be done at an enormous risk to the mother, then the child should be sacrificed. Patients were often sent into hospital in a very filthy condition after repeated attempts at delivery. In such cases if the child were still alive it would have suffered very much from pressure, and if it were delivered by section it would probably die in a short time. If a section would give the best chance to the mother a section should be done, but in his experience craniotomy would give the best chances to the mother and he would therefore perform it. With induction of labour the risks to the mother were very slight provided proper precautions were taken, but the results in regard to the child were very uncertain. The class of case in which a pubiotomy or symphysiotomy might be done at full term was the one in which induction of labour was suitable. The true conjugate should be at least three inches in length; the nearer full term the better. He did not consider that labour should be induced before the thirty-second week of intra-uterine life. A careful estimate should be made of the size of the head relative to the size of the brim and when the head can no longer be pushed into the brim with ease the labour should be induced provided the thirty-second week had been reached. The patient should be seen once a week as she approached that time. The size of the head relative to the brim of the pelvis was the most important factor to be considered and unfortunately it was the one which was most frequently disregarded. He considered that induction of labour was an operation which a general practitioner could undertake with safety. In conclusion Professor Jardine strongly advocated Cæsarean section when it could be performed under favourable conditions, but he quite recognised that there was a legitimate field for the other operations. He performed many of them every year. He appealed to every practitioner who was doing midwifery work to examine his patients carefully before full time if he had the least suspicion of a contracted pelvis, so that he would have full time to decide what method of delivery should be adopted. If the patient were in labour when first seen a careful estimate of the size of the head relative to the brim should be made, and if there was much disproportion the case should not be lightly undertaken. He warned practitioners not to attempt to deliver by version if they failed with forceps. The majority of cases of rupture of the uterus which he had had to treat had been caused in that way. If a man was not prepared to finish the

case he should not attempt delivery. It was neither fair to the patient nor to the man who would ultimately have to complete the work.

Professor P. ZWEIFEL (Leipsic) expressed his high appreciation of the great scientific men whom England had produced and mentioned William Harvey, Smellie, William Hunter, Edward Jenner, and Joseph Lister as men who would for all time be considered benefactors of mankind. He, before he knew the subject that had been fixed upon for discussion at this meeting, had arranged to present some experiences of his own with reference to two operations, subcutaneous symphysiotomy and extra-peritoneal Cæsarean section. Professor Zweifel did not describe the technical details of these operations but distributed a series of drawings from which his remarks could be easily followed. Subcutaneous symphysiotomy presented no difficulty, consisting as it did of introducing a wire saw through a small skin incision and cutting through the cartilage, the time taken being about ten minutes. In the operation of extra-peritoneal suprapubic uteri-section the main feature consisted in pulling off the peritoneum from the bladder and the plica vesico-uterina above as far as the peritoneum was loosely adherent. Professor Zweifel's experiences were founded on 16 subcutaneous symphysiotomies and three extra-peritoneal suprapubic uteri-sections, and for means of comparison he mentioned 52 open symphysiotomies and 126 ordinary Cæsarean sections after Sänger. Among the 16 subcutaneous symphysiotomies not a patient had died; with the open method three women died out of 52. In the first 100 ordinary Cæsarean sections two patients died; with the remaining 26 four died, so that his total mortality was 3 per cent. The three patients upon whom he had performed extra-peritoneal uteri-section all recovered but without any complication. The third had fever before and after the operation but recovered after an abscess had burst. The mortality of an operation did not give a sufficient impression of its value; it was necessary also to consider its complications. The after-history of his subcutaneous symphysiotomies had always been very good. As a rule there was no rise in temperature and the patients were able to get up three weeks after parturition, and in addition the pelvis was permanently enlarged. The widespread prejudice against symphysiotomy was entirely due to the imperfections and complications of the old method of performing it, and it was only common justice that more recent methods should be tried before this operation was condemned. The peritoneum adhering to the anterior wall of the uterus and to the posterior surface of the bladder was loose and pliable, so that these organs could be separated, and because of this the bladder could rise when urine was accumulating and the uterus could rise during parturition. What lesson might be learnt from this anatomical fact? That the peritoneum must always be incised transversely and that its edges must be united in such a way as to resemble its state before its section; if the peritoneum of the uterus was united to the parietal peritoneum wrongly the uterus lost its adaptability. In consequence of this fact Professor Zweifel could not agree with Sellheim's newest proposal to prepare in an infected uterus a fistula from the uterus to the abdominal wall with a sagittal incision of the uterus and sagittal suture of the peritoneum.

Dr. D. LLOYD ROBERTS (Manchester) personally liked to decline to perform any Cæsarean section except in a public or a private hospital. He performed Cæsarean section at a predetermined time in the last week of labour and did not wait till labour supervened, perhaps in the night. If the woman was septicæmic he trusted in Providence and did not think of removing the uterus. He performed Cæsarean section up to three and a half inches conjugate. Symphysiotomy was a very old affair, was a very unscientific operation, and would soon be banished as a method of treatment. His experience was that half of the children in symphysiotomy were born dead.

Professor B. KRÖNIG (Freiburg), as Professor Zweifel's assistant, saw a large number of operations of the kind under discussion and had himself tested these various methods of treatment. During the last three years that he had been working at Freiburg he found that there was no difference in the risk of rupture of the soft part in symphysiotomy and pubiotomy. He thought that the subcutaneous method of symphysiotomy was the best method. In 21 cases all the mothers recovered perfectly; four children died. Cervical Cæsarean section was a good operation; the bleeding was less and the risk of peritonitis was much less than in cases of ordinary Cæsarean section. At least in cases of great disproportion between the child and the pelvis cervical Cæsarean section was much safer than symphysiotomy. His patients got up the first day after the operation.

Dr. HUBERT ROBERTS said that the chief interest of his cases (two) consisted in the fact that Cæsarean section had been performed upon them before. He was of the opinion that it was not justifiable to sterilise the patient and preferred conservative Cæsarean section to any other operation. He thought if the patient wished to be sterilised that either the whole of the Fallopian tubes including their interstitial portion should be excised or that the stump of the tube should be treated like that of the appendix after removal by suturing the peritoneum over it.

Dr. MAY THORNE (London) said that in a certain number of cases there remained no choice of operation and Cæsarean section was the only method that could be employed. She thought that women should not be sterilised, especially the women in India who wished to have many children.

Dr. R. J. JOHNSTONE (Belfast) mentioned pubiotomy because he had invented a needle for passing the saw of the shape of a large aneurysm needle.

Dr. A. DEMPSEY (Belfast) was in favour of the early application of forceps in cases of contracted pelvis; one should not wait too long for moulding of the head. He wanted to know what was the advantage of getting the patient up in 24 hours after an operation, as mentioned by Professor Krönig.

Professor Krönig was asked by the PRESIDENT if he really meant that his patients got up and walked about the day after Cæsarean section and what the advantage was. In reply Professor KRÖNIG said that at least 80 per cent. of his patients got up 24 hours after labour. He thought the mortality was less because of this. His patients got about in the ward for the first three days and on the fourth went into the garden. The risk of hernia of the abdominal wound was lessened by Pfannenstiel's transverse incision which he always employed. He also allowed his patients up in 24 hours after hysterectomy.

Dr. LEA mentioned cases of Cæsarean section in which there was contraction of the outlet of the pelvis. On account of extreme transverse contraction of the outlet he had performed this operation three times during the last year. Was Cæsarean section the best operation for this class of case, or was symphysiotomy or pubiotomy better?

Dr. C. E. PURSLOW (Birmingham) had performed Cæsarean section upon a case in which some years previously Dr. Griffith had removed one inch from each Fallopian tube in Queen Charlotte's Hospital.

Dr. J. W. MARTIN (Sheffield) thought that each woman should be sterilised at the time of Cæsarean section, because, if not, she might become pregnant again and her surroundings might be so bad that the second operation might be fatal.

Dr. R. C. BUIST was sorry that Dr. Lloyd Roberts had to leave before he (Dr. Buist) had replied to Dr. Roberts's strictures on the operation of symphysiotomy, as it was not the first time that Dundee had reversed the opinion of Manchester. (Dr. ROBERTS, who was leaving, said that he would stay.) Dr. Buist remarked that science was a question of knowledge, and knowledge depended on the individual, and because an individual had no knowledge of, and did not appreciate the points of, a certain operation this was no reason why that individual should stigmatise the operation as unscientific.

In his reply Professor JARDINE stated that he liked to perform Cæsarean section just before labour commenced. The question of the size of the pelvis had nothing to do with the advsability or not of performing this operation. The only factor to be taken into consideration was the relation between the size of the child's head and the pelvic brim. More mischief was done and more children were sacrificed by the early application of forceps than allowing the head to mould. In every case where there was likely to be sepsis from previous handling or there was sepsis after labour he found that raising the end of the bed was very good treatment. He thought that Cæsarean section should not be performed more than twice on the same patient.

Professor L. MANGIAGALLI (Milan) read a paper on

Veratrum Viride in Eclampsia.

Stimulated by a report of Parvin he had used veratrum viride and now reported on 100 cases observed between 1897 and 1907. Three were admitted *in articulo mortis*; three had obvious signs of cerebral hæmorrhage which were confirmed post mortem; the remainder were treated with veratrum viride and six died. Even if all the fatal cases were included, his eclampsia mortality was about half what it had previously been, while of the cases treated with veratrum viride by themselves the mortality was about 6 per cent. He used the veratrum in small doses of from one-third to one-half a cubic centimetre (five to eight minims), repeating them at short intervals till the fits stopped, the indication for the next dose being a tendency of the blood pressure to rise. He had been able in some cases to prevent the development of fits, but these had not been included in the series reported.

DERMATOLOGY.

WEDNESDAY, JULY 29TH.

The PRESIDENT (Dr. E. G. GRAHAM LITTLE, London) addressed the meeting and in a few well-chosen sentences introduced the several distinguished foreign dermatologists who had consented to come to Sheffield to read important papers at the British Medical Association meeting. He then informed the meeting that the study of dermatology would in future receive greater attention from the medical student. He had used his influence as a member of the Senate of the University of London to assist those who had proposed to lengthen the period of clinical study in the medical curriculum, and the curriculum had now been modified in such a manner that the study of final subjects would occupy three years. In Germany the medical student was compelled to take a course of instruction in dermatology and venereal diseases, and the University of London had hitherto always promoted interest in dermatology by including cases of skin diseases among the clinical cases presented to the student who appeared for his final examination. With the new modification of the medical curriculum there was every likelihood that dermatology as well as the other specialties would receive due attention from the medical student.

Dr. R. SABOURAUD (Chef du Laboratoire Municipal de la Ville de Paris à l'Hôpital St. Louis) read a paper in French on

The Dermatomycoses Common to Men and Animals.

Formerly only two forms of fungus were recognised as affecting man—namely, those of favus and trichophyton. Since 1892 a third form had been known—the microsporon. Each of these types was the representative of a group. There were recognised at the present time three varieties of favus, 11 of the microsporon, and 20 trichophytons. Everything led them to believe that almost all these parasites could be observed both in men and in animals. Nevertheless, it appeared that certain varieties were more special to man and others more frequent amongst animals. 1. Of the three varieties of favus one alone was met with in the immense majority of cases—namely, the achorion Schoenleinii. The two other achorions studied by Dr. E. Bodin (achorion quinckeanum and achorion gypseum) were rare in man; the first named was chiefly met with in the mouse and the second had been found in the horse. The cultures of the various forms of favus were shown to the meeting and photographs of mice and children affected by the same fungus were handed round. 2. The microsporons actually known numbered 11, but only four had been noted in animals. The microsporon Audouini was the type of this group; it had been considered special to children but had just been observed in the dog. However, it was possible that in the observed case the infection had originated in the child and spread from the child to the dog. The microsporon equinum (Bodin) had been observed in cavalry regiments and contagion had once been noted; the beard in one man had been affected by the same fungus. The microsporon gelineum of Colcott Fox and F. Blaxall appeared to be frequent in England in children and in cats. The microsporon caninum (Bodin) had been discovered by Dr. Sabouraud in man and at the present time it was the cause of one-tenth of the microsporon cases in children. It occurred in several members of a family, like a ringworm, with mild inflammatory symptoms. In the beard of man it occurred in the form of round patches covered with diseased hairs with grey sheaths and on the skin it appeared as rosy rings with a brownish centre, often very numerous, not vesicular. Photographs and cultures of these varieties of the microsporon were exhibited. 3. The trichophytons were a parasitic group which comprised the greatest number of the dermatophytes and the majority of the varieties common to both men and animals. Altogether they comprised about 20 varieties, but these varieties could for the future be separated into four well-defined groups, thus simplifying the task of recognising them. The first group contained those trichophytons which on culture exhibited a growth which was acuminate, crateriform, and subcrateriform. There were seven or eight varieties in this group, to which several foreign varieties might be added. These had never been observed in animals. The second group contained the inguinal epidermophyton which up to the present had only been found in man. It was the cause of the eczema marginatum of Hebra which attacks the inguinal regions. The third group showed on cultivation a large white growth and comprised 11 varieties, all of animal origin, and giving rise to inflammatory suppurating lesions in man. This group could be divided into two families: (1) that of the trichophyton gypseum, with a smooth form of culture (seven varieties), reached man from the horse, the donkey, and other large domestic animals; in men they caused the kerion of Celsus; and (2) the trichophyton niveum, with a tufted form of culture, had four varieties. Two originated from the cat and from the dog and one from the horse, frequently met with in Paris at present, and one of very pale rose colour had its origin in fowls. When the last-named variety affected a man's beard it led to a trichophytosis resembling an ichthyosis pilaris which was not very rare and was very obstinate. The fourth group comprised those with a faviform type of culture growth, that was to say, with growth resembling that of ordinary favus. They were found in the calf, the donkey, and the horse, but more especially in the calf. A culture could be obtained only at a higher temperature than that required for the culture of the ordinary trichophytons. In man these trichophytons appeared as very numerous red circles fringed with white scales, the surface of which became impetiginous. On the beard the diseased hairs were surrounded with a white collar. Photographs and cultures of the various trichophytons were exhibited. Almost all the above-mentioned parasites could be easily inoculated in the laboratory animals, especially in the guinea-pig, by inserting into a prick in the skin a small quantity of the adult culture. When the physician saw a case occurring in man it was usually difficult to tell the particular variety of parasite in operation, but it was possible to say to what group it belonged. It could be recognised by the clinical characters of the lesion or by the microscopical appearance of the parasite in the hair of the scalp or beard; these characters were constant for each group. But it was the culture alone which could enable one to determine in a given case the variety of parasite present. At the present time there were definitely recognised one favus in the mouse, two in the fowl, and two in the calf and the donkey, and two trichophytons and two microsporons from the cat and the dog. In the horse there had been found one form of favus, two microsporons, and seven trichophytons. Except man, no other animal presented so large a number of fungous infections. This simple fact showed the complexity of the subject, the number of cutaneous affections which humanity could receive from domestic animals.

Dr. T. COLCOTT FOX (London) said that he had followed Dr. Sabouraud's work and could corroborate all that he had said with regard to the endothrix varieties of trichophyton.

Dr. LESLIE ROBERTS (Liverpool) read a paper on

The Diseases of the Skin in Animals Communicable to Man.

Skin microbes in animals belong to three groups. Group I. included a number of cocci on the border of saprophytical and parasitical life; they were found with seborrhœa, pityriasis, and all forms of follicular inflammations. They occurred in domestic animals, but so far as was known were not communicable from animals to man. Group II. included the streptococci, and their manifestations varied from slight impetiginous affections to severe lymphangitis, erysipelas, and deep abscesses. Dermatitis contagiosa pustulosa canadensis, a disease to which horses were very liable,

belonged to this group; it had been introduced from Canada in 1877. English veterinary surgeons had called it "horse-pox," thus giving rise to error and confusion, as the disease had no connexion with variola. It was highly contagious to horses and to man. It was believed to be identical with human impetigo contagiosa, but up to the present very little was definitely known as to the bacteriology of the disease. According to Schindelka most of the so-called pemphigus in domestic animals was not true pemphigus but corresponded to the bullous forms of human impetigo. Some forms were certainly communicable to man; cases had been reported in which dairymen had developed the disease after contact with bullous eruptions on the teats of the cows they had milked. The germ had not yet been isolated. In Group III. were placed the bacilli of tuberculosis, of glanders, and of anthrax. They were communicable to man by ingestion, inhalation, or cutaneous inoculation. Inoculation was usually the least harmful method of infection because the lesion remained local and benign. Tuberculosis was certainly transmissible from animals to man. Lupus vulgaris had attacked the hands of farmers who had been in the habit of dressing cutaneous eruptions with cream from tuberculous cows. The bacillus of glanders corresponded in the horse to tuberculosis in the cow. Acute glanders was a blood infection; chronic glanders was characterised by a dermatitis, terminating in necrosis and ulceration. All lesions of glanders were contagious, especially those of the nasal mucous membrane, and it was from this source that stable-boys, coachmen, cavalry soldiers, and veterinary surgeons were infected. The anthrax bacillus infected man chiefly from the sheep and always obtained entrance by accidental inoculation. The infection could also come from goats, horses, or cattle; and attacked men engaged in work with skins of animals, such as furriers, glovers, brushmakers, tanners, saddlers, wool-carders, shoemakers, and glue-makers. The streptothrices belonged to a higher order of organism and included Madura foot and actinomycosis. It was undecided whether to place these under the filamentous bacteria or the oöspora fungi. Actinomycosis had not been proved to spread from animals to man. Most cases in man could be traced to the use of diseased cereals. The lowly organised fungi included the hyphomycetes, and all forms were characterised by their power of living on the keratin products of human and animal skin owing to their ability to digest the same by means of a keratolytic ferment. Their complete life history was not yet known and it was improbable that a scientific classification would ever be made. Dr. Sabouraud's cultural test was the best means of differentiating the various forms, because with definite media and under definite conditions the same culture was always obtainable, the colour, shape, size, and rate of the growth being always capable of verification. A classification according to the size of the spores was not trustworthy, because the size of the spores of the same fungus varied with the host. With the present state of knowledge Dr. Sabouraud's threefold method of differentiation was the best—namely, (1) the physiology, (2) micro-morphology, and (3) the cultural aspect of the fungus under certain precise conditions of cultivation. The microsporon vegetated in the cuticle of the hair root, reducing it to débris. The mycelium was converted into a mosaic mass of spores in this position, whereas in the substance of the hair, where the conditions were less favourable to fructification, mycelial filaments were visible with septa far apart. The microscopic morphology varied little whether microsporon occurred in hair or epidermis, in man or animals. The microsporons as a group were distinguished by a simple and homogeneous method of fructification, the whole of the mycelium being converted into a mass of undifferentiated spores. In the other keratomycetes the spores varied in size, shape, and methods of division, and in the trichophytons mycelium was never entirely lost. Trichophyton endothrix left the hair cuticle intact and invaded the hair substance. Trichophyton ectothrix formed a network of mycelium with septa far apart surrounding and penetrating the hair. Dr. Leslie Roberts then discussed the cultural tests which had been demonstrated by Dr. Sabouraud in his address. With regard to the animal hosts of the keratomycetes, it had been shown by Friedberger and Fröhner that calves were the most frequently infected and next to them dogs. Horses, goats, and cats were less frequently infected and pigs and sheep were only rarely infected. Small rodents, rabbits, guinea-pigs, and mice could be inoculated with the trichophytons. Achorion occurred spontaneously in rabbits, mice, and guinea-pigs. The geographical distribution of the keratomycetes still required investigation. Anthrax was most frequent in England, Holland, and Switzerland. With the trichophytons infection frequently spread to children from dogs and cats; infection could also travel through a neutral intermediary. The fungus might pass from the barber's cup to the beard in shaving. The leading authorities on veterinary pathology had not yet distinguished between the several varieties of ringworm; for example, the seventh edition of a standard work in Germany published this year still spoke of a single fungus in connexion with all forms of animal ringworm. In France the animal pathologists, under the influence of Sabouraud and Bodin, had recognised the distinctions between the microsporon and the trichophytons. Dr. Leslie Roberts stated that lack of time prevented him from describing the faviform fungi and the animal parasitic skin diseases communicable to man. Leuckart had stated that more than 50 distinct species of animal parasites infested the body of man.

Dr. J. L. BUNCH (London) asked whether Dr. Sabouraud had worked out the botanical classification of the fungi.

Professor T. C. GILCHRIST (Baltimore) said that on making a routine examination of impetiginous lesions of the scalp in an epidemic he had found a pure culture of trichophyton; and he asked whether the deduction to be drawn from this fact was that the staphylococcus albus which was present in most scalp lesions had been killed by the fungus.

Dr. SABOURAUD, replying, said that the botanical features of the fungi were not sufficient to enable us to differentiate the fungi. Probably the epidemic of impetigo in which a fungus had been found in pure culture was due to the presence of one of the powdery forms of trichophyton culture which he had exhibited that morning.

Dr. H. NOIRÉ (Paris) read a paper on

The Treatment of Hypertrichosis by the Roentgen Rays.

Dr. Sabouraud and Dr. Noiré had made experiments together to ascertain what thickness of aluminium in a disc interposed between the rays and the skin would eliminate those short rays which did not penetrate to the hair papillæ in the skin. This was determined at 4-10th millimetre. The disc was placed 6½ centimetres from the skin—i.e., between the pastille and the skin. The risk of dermatitis was by this method much diminished. The patient was given four or five applications at intervals of a fortnight and two or three in addition at intervals of a month. At each exposure the dosage administered was equivalent to tint B of Sabouraud's radiometer. In some cases, after a few months, two or three additional sittings had been required. The results had been very hopeful.

Dr. H. LEWIS JONES (London) read a paper on the

Principles of Ionic Medication.

He gave a brief *résumé* of the recent work on this subject. An ion was an electrically charged atom or molecule. The amount of chemical action produced in any solution of an electrolyte was exactly proportional to the quantity of electricity which had passed through it. An atom of silver was 108 times as heavy as an atom of hydrogen, and a current that would liberate one gramme of hydrogen would liberate 108 grammes of silver. The use of electricity for purposes of introducing drugs into the body dated from 1833. In 1859 Sir Benjamin Ward Richardson had devoted time to the subject, and in 1898 Morton of New York had published a book on cataphoresis. Ionic medication had been set on a scientific basis by the writings of Dr. Stéphane Leduc, who had published important papers since 1900. Certain drugs were not available for ionic medication, such as chloral, chloroform, ether, alcohol, phenol, and camphor, because they did not dissociate in solution. The alkaloids, on the other hand, were very suitable, such as cocaine, strychnine, and adrenalin; all neutral salts, salicylic acid, and many coal tar compounds could be employed and the metals zinc, copper, magnesium, and aniline were very suitable for ionic medication. There was a field for research as to the amount of penetration attained by the different ions. The correct strength of the ionic solution was 1 or 2 per cent. When a carbon electrode was employed a 2 per cent. solution was advisable and the moist pad should consist of a large number of layers of lint in order to absorb the hydrogen and

hydroxyl ions driven in respectively at the positive and the negative electrodes. Both these substances being caustic produced pain at the points of contact in galvanic applications. Dr. Jones next discussed the indications for ionic medication. The current should be given for a considerable time at each séance on account of the slowness of the ionic movement. The painfulness of the operation would probably be remedied as the technique was improved. Dr. Jones then described his method of treatment for rodent ulcers by the introduction of zinc ions and his experience in treating diphtheritic infection of the skin, septic conditions, warts, and lupus. With the last-named he could lay claim to only partial success; he had employed aniline and zinc. Cocaine ions were useful for local anæsthesia before small operations, such as the removal of moles or nævi. He had had very little success with ringworm; copper ionisation had been tried but he had found that the copper did not penetrate equally into all the diseased follicles. At the end of his address Dr. Jones showed to the meeting the result of an experiment which had been begun 15 minutes previously. A current of 15 milliampères had been passed through 20 folds of paper, each fold one-fifth mm. thick. Copper had been introduced by the copper positive pole and potassium iodide at the carbon negative pole. A neutral electrolyte of sodium sulphate had been employed. The paper was washed and tested with a solution of ferrocyanide of potassium; it was found that the copper had passed through 13 of the layers of paper. Iodine was tested for with a solution of mercuric chloride and was found to have penetrated almost all the 20 layers.

Dr. J. H. SEQUEIRA (London) said he had been able to confirm some of Dr. Jones's results but he had not been satisfied with the action of zinc ions on the raised hard margin of rodent ulcer. Lupus erythematosus of the fixed type had benefited by the introduction of copper ions. He had not found cocaine ionisation of much value as an anæsthetic.

Dr. FREDERICK GARDINER (Edinburgh), Dr. J. GOODWIN TOMKINSON (Glasgow), Dr. ROBERTS, Mr. G. PERNET (London), Dr. T. D. SAVILL (London), and others joined in the discussion; several of the speakers mentioned that they had failed to obtain anæsthesia by the use of cocaine ionisation, and that the painfulness of ionisation would prevent its being widely employed.

Dr. JONES, in reply, said that the painfulness of zinc and copper ionisation could be diminished by the use of cocaine ionisation for a few minutes preliminary to the introduction of the metal ions. Cocaine anæsthesia thus obtained was very superficial. To avoid pain it was also necessary to turn on the current very gradually. So long as the current did not exceed three milliampères per square centimetre the pain was tolerable. Failure in the treatment of rodent ulcer by zinc ions was to be attributed to too short sittings and to the use of too small currents. During the past year he had increased the length of a sitting from 12 to 20 minutes, and had succeeded in curing most obstinate cases of rodent ulcer.

Dr. SEQUEIRA read a paper on

Calmette's Ophthalmo-Tuberculin Reaction, with Special Reference to the Diagnosis of Cutaneous Tuberculosis.

Dr. Sequeira remarked on the desirability of a convenient and reliable test as to the presence or absence of tuberculosis in a patient. He pointed out that besides being reliable such a test must be free from danger and must not aggravate existing disease. He commented on the risks of the old tuberculin and upon the difficulties attendant upon the observation of the opsonic index as a means of diagnosis. He discussed von Pirquet's work on the "cuti-reaction," and gave a *résumé* of the results. He then surveyed the observations of Calmette and his followers, especially quoting Nicolas and Gauthier's paper on the ophthalmic reaction in skin diseases. His personal observations were as follows. In lupus vulgaris he obtained a positive reaction in 16 cases examined. Four patients suffering from erythema induratum of Bazin and one from verruca necrogenica had reacted positively. One case of follicular tuberculides (folliculitis) had given a positive reaction. Four cases of tuberculous ulceration, including one of the glans penis, had also reacted positively. Two cases of doubtful ulceration had given negative results and clinically they had been proved to be septic ulcers. One case of extensive streptococcal ulceration, which had been diagnosed as being tuberculous, had given a feeble reaction, and the necropsy in this case had revealed the presence of tuberculous mesenteric glands. 31 cases of lupus erythematosus had been examined. Two of the disseminated type had failed to react, while five had given a positive reaction. In the fixed type 24 cases had been examined; seven of the cases uncomplicated with tuberculous disease elsewhere had given no reaction, while 14 had reacted positively, though in some instances feeble. Two cases of syphilitic ulceration (congenital) had failed to react. Cases of psoriasis, pemphigus, and other conditions had been tested. On the whole, Dr. Sequeira concluded that the test was reliable, as no case known to be tuberculous had failed to react. He had devoted considerable attention to the risks of eye trouble and expressed the opinion that the test should only be tried where both eyes were quite free from disease. As a rule a 0·5 per cent. solution freshly prepared was sufficiently active for practical purposes and with care appeared to be free from risk.

Mr. H. DE C. WOODCOCK (Leeds) had not found the Calmette reaction either safe or reliable. In patients suffering from surgical affections he had found it actually dangerous in several cases. In medical cases it was not dangerous; but in one case he had obtained a negative Calmette reaction, although tubercle bacilli were present in the sputum. He recommended the use of the blister method instead of the Calmette reaction. In this method two small blisters were applied, one on each side of the spine, and one drop of Koch's tuberculin was then placed on the hyperæmic area and the result watched.

After Mr. PERNET and others had made a few remarks Dr. SEQUEIRA replied.

THURSDAY, JULY 30TH.

The PRESIDENT, Dr. GRAHAM LITTLE, briefly introduced Professor ALBRECHT NEISSER (Breslau) who delivered an important address on

Modern Syphilis,

with special reference to experimental work on the subject. In this address Professor Neisser laid before the section the result of three years' work in Java. An expedition had been undertaken under his direction and mainly at his own expense, and Java had been selected for the research because of the relative facility of obtaining suitable animals in that country for experimentation, the anthropoid apes and the commoner lower apes alone giving results comparable to those observable in human beings. The work was begun in January, 1905, and eventually there were engaged six medical men and three European and 12 Malay assistants. After April, 1906, the costs of the research were borne by the German Government with a small grant from the Dutch Indian Government. A house was taken with a large garden, in which stalls surrounded by wire and protected from sun and rain were erected for the use of the 600 to 800 animals which were kept under observation. At the outset Professor Neisser pointed out that during the last decade their knowledge of syphilis had made great advances; syphilis and soft chancre had been separated, the relationship of many visceral and nervous diseases to acquired and congenital syphilis had been discovered and valuable principles for treatment had been laid down, such as the continuous intermittent method and subcutaneous injections. Nevertheless, the knowledge of syphilis had not so scientific a basis as that of tuberculosis and gonorrhœa, because in these diseases the organism had been recognised for some time and experiments had been conducted with their cultures and with animals. Within the past few years, however, three discoveries of prime importance had been made, discoveries which even in the short time that had elapsed had already led to great advances in the knowledge of the pathology, diagnosis, and treatment of syphilis. The three discoveries were: the spirochæta of Schaudinn, the susceptibility of the anthropoid apes and also common lower forms of ape to syphilis, and the serum diagnosis of syphilis. With regard to the first of these discoveries Professor Neisser declared himself to be a firm believer in the spirochæta of Schaudinn as the cause of syphilis. He considered its presence to be a definite proof of the presence of syphilis. Owing to the difficulty of demonstrating the presence of the spirochæta negative results should be interpreted with great caution. Objections to the theory of the spirochæta as the cause of syphilis he regarded as unjustifiable, even incomprehensible, in spite of the fact that many points still

awaited explanation, such, for example, as the infectivity of the internal organs of infected apes, although the spirochæta had only in rare instances been discovered in these organs. In lupus and in caseous forms of tuberculosis a similar objection might be raised; the bacillus of tubercle was only rarely found in such conditions, although no one now denied the causal agency of the bacillus. Metchnikoff and Roux had first discovered the susceptibility of apes to syphilis, and this had been confirmed by Lassar, Finger, Hofmann, Tabolotny, Siegel, and himself. The researches in Java had led him to the following conclusions. As in man, apes developed a primary sore after an incubation period of from 20 to 50 days, and suffered from "constitutional" syphilis owing to the invasion of the whole body by the syphilitic virus. Only in the anthropoid apes was constitutional syphilis manifested by a visible "secondary eruption" on the skin and mucous membranes. In the lower apes there was found at most a local recurrence near the primary foci; but the fact that even in them syphilis was a constitutional affection was proved by the fact that inoculation with the internal organs of the affected animals transmitted the disease to healthy animals. A second difference between the anthropoid and lower apes was that in the anthropoid apes inoculation on any part of the body produced a primary sore, whereas in the lower apes a primary sore could be produced only on the eyebrows and genitals. Thus the different species showed a *variation in susceptibility*. Similarly in man "malignant" syphilis had been ascribed to special idiosyncrasy. On the other hand, no *variation in virulence* could be demonstrated. Syphilis always ran the same course, whether the incubation period was long or short, whether the virus was obtained from man or animal, from primary or tertiary lesion, or from internal organs. The disease could not be produced by syphilis serum. These facts pointed to the improbability of obtaining a mitigated virus or vaccine of syphilis. A mitigated or locally restricted syphilis had never been produced. Further, the researches in Java had proved that tertiary lesions were infectious no matter how many years had elapsed since the primary infection. The spirochæta was present in every syphilitic manifestation in the body. The infectivity of tertiary lesions disappeared very soon after suppuration or necrosis supervened, as after opening a gumma. Secondary lesions occurring in the mouth or on the genitals were dangerously infective, especially if recurring after many years, when they were scarcely noticed by the patient. Inoculation from the blood had been successful only in a few cases. This coincided with the fact that spirochætæ had rarely been discovered in the blood. Finger had twice inoculated successfully with semen, which accorded with Professor Neisser's own observation that the virus was often retained for a long period by the testes. This fact threw some light on the possibility of paternal infection of the child and intra-uterine infection of the mother. Outside the animal body the virus died after a few hours, thus proving the danger of mediate transmission by means of various objects to be but slight. Professor Neisser then considered the question of disinfection. Metchnikoff's 33⅓ per cent. calomel ointment should be employed locally as a prophylactic, but it was not infallible. Vigorous washing with 2 in 1000 to 3 in 1000 sublimate solution was a very useful disinfectant after exposure to contagion; 1 in 1000 was not a strong enough solution. With regard to therapeutic cures, a difficulty lay in the fact that, although a man might be apparently cured and healthy even for decades, yet tertiary lesions might then appear, proving that he had never been really free from the virus. With animals, when an apparent cure had taken place, two methods were applicable for discovering whether the cure was real: (1) the animal could be killed and a second animal inoculated from the organs; or (2) re-inoculation could be performed. If the re-inoculation produced syphilis it was proved that the cure had been real. The importance of these experiments lay in the fact that by these methods they had been able to discover which remedies were most useful and rapid in bringing about a cure. The serum-diagnosis test (the complement-fixation method) for the diagnosis of syphilis, introduced by Wassermann, Bruck, and himself, was perhaps the most important of the three discoveries above mentioned. This method of diagnosis depended upon the fact that certain anti-bodies were produced in the animal body infected with syphilis in such number as to be demonstrable. These substances were normally present in the body but not to such a degree as to be capable of reacting to the above-mentioned method of examination. For practical purposes Wassermann's reaction was efficient; a positive reaction was obtainable only with the serum of a syphilitic patient. In spite of many thousand examinations the reaction had never been obtained in a healthy person. The converse, however, was not true—absence of the reaction did not indicate freedom from syphilis; repeated examinations sometimes revealed the presence of the reaction. The test was of supreme importance in cases (1) where syphilis was suspected but the obscurity of the symptoms made a diagnosis impossible, and (2) where suspicious obscure symptoms existed but no history was obtainable. Both for diagnosis and treatment in such conditions a positive reaction gave invaluable assistance. With a doubtful primary sore before commencing treatment it used to be the custom to wait till the secondary eruption appeared. During this waiting period the spirochætæ were endangering the whole body. The experiments on apes had shown that the virus infected the internal organs 16 days after infection—that is to say, even before the appearance of the primary sore; thus when treatment was delayed, even till the primary sore had formed, the whole system was already infected. Treatment was much more effective when commenced before general infection had occurred. By the demonstration of the spirochætæ the practitioner of to-day might determine whether an erosion was the beginning of a primary lesion, and by the serum diagnosis he could decide whether a general infection was present. In the future there could be no excuse for avoiding early local and radical treatment and early and energetic general treatment. As regarded local treatment, early excisions of the primary lesion in apes, even so late as 16 days after infection, had been successful in preventing generalised syphilis; but this method was unlikely to be so efficient a method of treatment for man, in whom the virus appeared to extend much more rapidly into the adjacent tissues. Professor Neisser regretted that the general treatment which was most successful for apes could not be carried out in man. With the apes syphilis was aborted when treatment was begun on the fifth to the tenth day with atoxyl, or Ehrlich's acetate of atoxyl. Animals could bear larger doses of atoxyl than man. For man he had found a combination of mercury and atoxyl acted best; he recommended energetic mercurial inunctions or injections and 0·6 grain of acetate of atoxyl injected on two consecutive days in each week. Professor Neisser next discussed the treatment of cases where general syphilis was already established. Whether the symptoms were secondary or tertiary, spirochætæ were certainly present, and therefore it was necessary in all cases to employ mercury and atoxyl, which were deleterious to the spirochæta. The iodine compounds would be employed in addition where tertiary lesions were in evidence, because experience had proved their curative action on tertiary processes. When a patient showed no symptoms but former syphilis was suspected the serum reaction should be tried; when a positive reaction was obtained the diagnosis was cleared up and treatment should be maintained. Such patients were not necessarily unfit for marriage, because the spirochætæ might be encapsuled in obscure foci in the body, but they ought to be treated intermittently. It was necessary that every patient who had developed symptoms of general syphilis should be treated for at least four years by the chronic intermittent method with mercury and also with atoxyl and iodine. In future quinine might be found useful also. The largest possible single doses of mercury should be given. This varied with each individual. Quinine was ineffectual against malaria until the correct dosage and time of administration in relation to the fever had been discovered; the same accusation was true of anti-syphilitic remedies at the present time. Mercury did not merely remove symptoms, it destroyed the virus. Energetic and thorough treatment undoubtedly destroyed the virus; many animals had been cured and re-inoculated, after recovery, three times. Formerly it was believed that one attack of syphilis produced immunity. It was true that in man re-infection was rare, but this was probably due to the fact that the patient still had syphilitic foci in his body. All animals resisting re-infection when killed were found to have infective organs. Professor Neisser concluded that the so-called "immunity" in animals really depended on the fact that they were still diseased, and he believed that the same

conditions existed in man; that men who resisted re-infection still harboured the virus. This opinion was confirmed by the fact that they had not discovered a method of procuring a passive or an active immunity, nor any method of treatment with immunising substances.

After the address a number of lantern slides were exhibited, showing preparations of the various spirochætæ and photographs of the lesions in inoculated apes.

INDUSTRIAL DISEASES.

WEDNESDAY, JULY 29TH.

The chair was occupied by Mr. W. F. DEARDEN (Stretford, Manchester), the Vice-President, who said that the section would hear with much regret that the President, Professor Thomas Oliver of Newcastle-on-Tyne, had been detained on business of urgent importance and that he was unable to be present that morning. The subject of industrial disease naturally was one of paramount important in a centre of industry such as Sheffield and it had aptly been selected for special notice by the President of the Association in his inaugural address.

Dr. S. KING ALCOCK (Burslem), in opening a discussion on

The Granting of Certificates of Fitness for Employment,

said that his paper would be principally concerned with that section of the Factory Act which dealt with the age at which children might commence work and with those aspects of the subject which affected the examining surgeon. In forming a decision as to the fitness of a child for work it was of great importance that the conditions of employment should be thoroughly understood by the certifying officer. A child when employed in a factory had to be examined within a week of commencing work, and although certificates might be withheld at discretion the question arose whether the surgeon was to withhold them only in case of actual disease or whether he should refuse to allow a child to be employed because there was a possibility that health might be impaired by his working at some particular trade. Minor complaints and defects, such as deafness and errors of vision, must be dealt with on common-sense lines and a judgment formed for each individual case based on the conditions of work, but affections such as pediculosis, blepharitis, &c., for instance, should be rigorously excluded from a factory until they were remedied. Medical examination of school children had recently introduced new considerations. As an inspection of each child at the time of leaving school was suggested it might be thought that that examination would be sufficient for entrance to a factory, and that it would thus render a test by a certifying surgeon unnecessary. If the latter was superseded the measure would be a distinct retrogression. The certifying surgeon alone could understand the conditions of labour and the circumstances in which a particular child would be placed. But the drastic powers of the surgeon in stopping the employment of a wage-earner should be very carefully exercised. Further, there should be repeated examination and more continuous observation. It was possible for a child to be examined at 13 years of age on entering a factory, and unless he changed his employment he would not be seen again for three years. Children ought to be examined every year during industrial employment. In conclusion, he desired to emphasise the following points: (*a*) there should be better convenience for examination; (*b*) the examination ought to take into account and to record the general health, fitness, age, height, and weight of the candidate; (*c*) the certifying surgeon ought in every instance to have full knowledge of the conditions of employment; and (*d*) the desirability of the abolition of half-timers.

Mr. DEARDEN said that for a long time the nation had paid much attention to the conditions of employment in factories but had only recently concerned itself about the equally important sanitary conditions which prevailed in schools. The recent Act was of very great importance as an educational departure. He then briefly traced the history of industrial legislation, beginning with the Act of 1833 (by which children under nine years old were prohibited from working in workshops and factories) and continuing his review down to the Consolidating Acts of 1878 and 1901. By the former of these statutes certificates ceased to be based upon age and were granted on considerations of health. The Home Secretary also was intrusted with administration and he drew up rules for the working of the department. By the latter Act the age at which a child might be employed as a half-timer was raised to 12 years, and it was further made incumbent on the surgeon to take the conditions of employment into account as well as the physical fitness of the candidate.

Dr. T. F. YOUNG (Liverpool) said that in endeavouring to save young persons from the danger of suffering from their employment they might, unless they were careful, do them real unkindness. When unemployment was rife the wages of younger members of the family were often of vital importance and the Factory Acts were designed to secure equal consideration for the interests of employer and employed alike. In examination each case must be considered absolutely on its own merits. It was the duty of the certifying surgeon to insist on satisfactory quarters being provided for examination. He thoroughly agreed with Dr. King Alcock that the nature of the work should be taken into account. Under the new School Examination Act the duties of the factory surgeon would be little affected or his work lessened unless different arrangements were made. In his own district one man had been appointed to inspect and to give medical supervision to 16,000 children.

Dr. ALEXANDER SCOTT (Glasgow) said that although the examination of a factory surgeon could never be replaced by that of the medical officer of schools he rejoiced that efficient scholastic examination had now been instituted. A weak part of the present Factory Act was the lack of definite provision for a child or young person being examined *at his work*. In the case of dressmaking and similar employments it was, for instance, most important that the medical officer should see the workrooms and the conditions of labour. In the conditional certificate they had a powerful lever to effect improvement.

Dr. R. PROSSER WHITE (Wigan) said that in his district the class of candidates for employment as half-timers was bad. At least 10 per cent. had to be refused. When a child had been passed for a certain employment and afterwards had to abandon it on account of unfitness he considered that the certifying surgeon had inadequately performed his duty. Humanity was the first consideration, and it began and ended with the child. It was an imperative obligation on certifying surgeons to understand exactly the condition of work to which a child would be put. In his own district the work of a child of 15 might be to carry a "doffing tin," which weighed, empty, 15 pounds, and full, 40 pounds. That would be a serious burden for anyone in that room, and as regular employment for a child such work was unjustifiable.

Dr. R. H. CROWLEY (medical officer of schools, Bradford) said that much of the distrust which had arisen with regard to the employment of children and half-timers was due to an impression that the examination was perfunctory and inadequate. He understood that not 1 per cent. of all candidates were rejected. As a matter of fact, half-timers should be very carefully examined at the time of entry, and he agreed that the examination should be repeated at frequent intervals. The medical officer of schools could never supersede the certifying surgeon because practical knowledge of the work at which the half-timer was to be employed was necessary.

Dr. J. A. W. WATTS (Hyde) said that although the system of half-time had been adversely criticised it was a thoroughly good one. Not the least of its advantages was that children employed in that way were actually healthier than those who passed the whole of their time in school. As a matter of fact, the atmosphere of the worst mill was generally better than that of the best elementary class-room, and a child might sometimes be advantageously certified in order to save it from school. He regretted that on the commission recently appointed to inquire into the subject of industrial employment no factory surgeon had been appointed; that was a mistake. There ought also to be some possibility of uniformity between certifying surgeons as to the results of examination. It was detrimental to efficiency that a child should be passed by one surgeon after being rejected by another. Might not this be avoided by endorsement of a birth certificate or in some other way?

Dr. R. W. EDGINTON (Birmingham) said that although he did not think they would be entitled to mark birth certificates,

uniformity was of the first importance and an attempt should be made to secure it. He regarded the conditional certificate as a most useful instrument. A child that was quite unfit for one trade might be well suited for another.

Dr. RALPH P. WILLIAMS (medical inspector of schools, Sheffield) said that supposing every facility was given to an examiner 200 school children might be examined in one week; in other words, during the school year of 40 weeks about 8000 children were the utmost capacity of a medical officer. The atmosphere of elementary schools was admittedly bad but great improvement had been effected and more would follow. In Sheffield the half-timer had almost been abolished; not more than 400 were now employed in that city.

Dr. T. M. LEGGE (His Majesty's Inspector of Factories) said that the duties of medical officers of schools and those of certifying surgeons were allied and could never be in conflict. Each examination had its own purposes and limitations. In the school the child was prepared for life generally, while the function of the certifying surgeon was to prevent him from embarking upon employment for which he was unfitted. In the last annual report of his department a sample, taken from some 1500 cases, of qualifications and conditions had been tabulated which was intended to serve as a standard to guide certifying surgeons. In view of the want of uniformity some such standard was eminently desirable. Legislators would always insist on a strong body of authoritative medical opinion before passing Acts affecting industrial employment. The report of the Committee on Physical Deterioration had wisely emphasised the necessity of medical supervision for young workers between the ages of 13 and 18 years. Without doubt that was the time of life when it was most necessary. He thought that factory certification was best done by men who were thoroughly acquainted with the home conditions of the child and the nature of the work which he was to undertake, while re-examination and continuous care would make the duties of the surgeon more efficient and more interesting.

Mr. S. BENNETT (one of His Majesty's inspectors for the district of Sheffield) said that continuity was eminently desirable. He would prefer to see the certifying surgeon acting as a visitor and inspector of the conditions of employment rather than as a mere examiner. The bridge which had been formed between the functions of medical officers of schools and factory surgeons would be of great advantage not only to the individual but to the community.

Mr. DEARDEN said that the discussion had been one of very great interest and moment. What was of most importance in their duties was that they should in the first place insist not only on general but on special fitness for the work at which the candidates were to be employed; and even more imperative was the obligation to see that the chief interest considered was that of the children. The fact that rejections for unfitness had doubled within the last few years showed that the examination as carried out at present was by no means inadequate or perfunctory.

Dr. F. SHUFFLEBOTHAM (Newcastle-under-Lyme) read a paper on

Industrial Dermatitis,

in which he described the various forms of eczema and ulceration which were set up by irritants used in technical arts and crafts. Of these, bichromates, aniline, arsenic, materials used by potters and laundresses, chrysoidin, flax, strong alkalies, acids, and other chemicals were the most important. The intense skin irritations which were also seen in persons engaged in handling cinchona bark, sugar, lime-juice, and bitter oranges were now appreciable elements in the list of diseases with which the physician had to deal. In remedying these distressing affections cleanliness was all important: in all similar trades frequent and thorough washing should be insisted on and regular medical examination of employees should be compulsory.

Dr. LEGGE said that in these industrial complaints the lesions in the mucous membranes were even more important and distressing than those of the skin. In chrome poisoning the septum of the nose was almost invariably involved. Emerald green was especially dangerous, and every worker in a factory where it was used was liable to a perforated septum. Arsenical green, however, was not now employed in the manufacture of artificial flowers. It was, indeed, scarcely used at all in any industry in this country.

Dr. EDGINGTON, Dr. PROSSER WHITE, and Dr. ALCOCK also spoke, and Dr. SHUFFLEBOTHAM briefly replied.

THURSDAY, JULY 30TH.

The proceedings on the second day of the meeting of the Section of Industrial Diseases were opened by the PRESIDENT, Professor T. OLIVER (Newcastle-on-Tyne), who said that Sheffield had long borne an honourable part in the study of illnesses due to occupation. The subject had not received the attention which it deserved, but it was now becoming recognised as one of vital importance not only to individuals but to the nation, and there could be no more appropriate place for the discussion of economic health problems than the city in which they were met.

Dr. HAROLD SCURFIELD (medical officer of health of Sheffield) read a paper on

Industrial Diseases caused by Dust.

He said that if the mortality tables were consulted it would be found that of the whole population of England over 25 years of age three males died from consumption for every two females. In Sheffield, however, the proportion of males over that age who died from the disease was 6 to every 2 females. In other words, 120 men annually died in that city who would presumably not have died were the conditions of work as favourable as those of the rest of England. Similar ratios prevailed with regard to bronchitis and pneumonia, and statistics further proved that most of this exceptional mortality was due to the occupation of the victims. The following table contrasted the death-rate from phthisis and other diseases of the respiratory organs as occurring in grinders and cutlers with that from all other causes in adult males.

Average Mortality in Sheffield from all Causes and from Phthisis and Diseases of the Respiratory Organs during the Three Years 1905, 1906, and 1907 in certain Dusty Trades and among all Males over 20 Years of Age.

—	Males over 20 years of age.	Average death-rate per 1000.		
		All causes.	Phthisis.	Respiratory diseases.
Grinders	3,375	34·2	16·3	5·7
Cutlers	2,500	40·8	7·2	8·4
File-cutters	1,850	32·1	4·5	5·4
Silver, &c., workers ...	2,380	26·9	5·5	4·9
All males	127,000	16·2	2·6	2·1

It would be seen from the table that the death-rate of grinders from phthisis was more than six times and the death-rate from respiratory diseases nearly three times that of the average male in Sheffield; also that in the case of cutlers the death-rate from phthisis was nearly three times, and the death-rate from respiratory diseases four times, that of the average male in Sheffield. The conditions which prevailed in the German Empire were vastly more favourable to the workers in trades of which dust was an inevitable concomitant. The whole question had been very carefully studied there by Dr. Röpke of Solingen—a city which occupied the same position as a centre of the cutlers' industry that Sheffield did in England—and the effect of the rules and official regulations which he drew up had been to improve to an almost incredible extent the health of the workers. The first direct result of dust inhalation had been shown to be irritation of the mucous membranes of the nasal passages with erosion and ulceration of the septum, this condition being afterwards followed by atrophy and loss of smell. The condition at this stage was curable and many instances had occurred in which cessation from work had been followed by complete recovery. Atrophy, however, facilitated the entrance of dust into the lungs and fibrotic inflammatory masses forming there ultimately broke down and the cavities which were left became inoculated with tubercle bacilli. The position of the Sheffield grinder, who worked on a stone revolving away from him, was less injurious to health than that of the German, whose stone revolved towards him, and who had

in consequence to stoop over his work. In Germany, however, dry and wet grinding were carried out in separate rooms, while in Sheffield both processes were carried on in the same room. In the German model of workshops great improvements had been effected; all wheels were now compulsorily placed above the level of the floor, which could, therefore, be easily cleaned; pits and holes in which dust might accumulate were forbidden, and grinding wheels were protected by strong iron guards which fulfilled the double function of preventing accidents and acting as dust preventers. By means of powerful exhausts the dust was carried into proper receptacles; and it had been found possible in this way to clear the atmosphere of the cutlers' workrooms. General cleanliness was also strictly enforced, and healthy home workshops with electric power were now a remarkable feature of the industry in Germany. Dr. Scurfield illustrated his address by a large number of lantern slides which showed the conditions of work both in Sheffield and in Germany.

The PRESIDENT of the section said that he had been much impressed by an excellent paper and a very lucid demonstration. They were much indebted to Dr. Scurfield for the trouble and care which he had taken in preparing it. It had to be confessed that, so far as this industry was concerned, Germany showed to advantage. If our own employers would travel and glean a few hints from our neighbours they would see for themselves what could be effected by sanitary precautions, and would find a short way to the improvement in the health of their workpeople which they were so anxious to obtain. The medical point of view, as contrasted with that of the medical officer of health which had been so ably dealt with by Dr. Scurfield, had been left to him and he would point out, in the first place, that in Sheffield, in contrast to the general reduction of the phthisis death-rate in England, the mortality from pneumoconiosis had not decreased. In America, although things were not quite so bad, they were still very unsatisfactory. Interesting questions had arisen as to the route which dust took in reaching the lungs. Calmette of Lille had shown by feeding animals with various kinds of dust that it could be absorbed by the intestinal mucosa and ultimately, by way of the lymphatics, could arrive at its destination in the lungs. This had been confirmed by other observers; and it had further been shown that in older animals the mesenteric glands and lymph channels did not effectually stop the passage of dust as they did in the young. Still, he was by no means prepared to give up the inhalation theory. As was well known, coal dust might be stored in the lungs indefinitely without symptoms; but metallic and many other "trade" dusts set up irritation at once. In necropsies on such cases the pleura were seen to be thick and adherent; the section of the lung was gritty and hard, and the tissues were dark or steel blue in colour. There were also nodules of thickened connective tissue all through the lungs and here and there cavities formed by their necrosis were to be seen. He was quite clear that the affection at first was purely inflammatory. The condition was not tuberculous; it was a true dust disease, and no tubercle bacilli were to be found. Afterwards, however, in most cases tuberculosis was engrafted on the damaged lung. He recognised the value of experiment, but pneumoconiosis was certainly not always of intestinal origin. It was not unusual to find vegetable cells which had been derived from wood dust in the lung tissue. These could not have been taken up by the intestine, nor could steel, iron, or grit such as they saw in silicosis. Another point of interest in connexion with grinders' disease was that though all the muscles of the arms were in frequent and regular use they were almost invariably undeveloped, and this although there was no damaged lung tissue. That condition had been well demonstrated in the photographs of people at work which had been shown by Dr. Scurfield. With regard to a remedy, frequent medical examination was necessary. If a man was removed from his work so soon as he showed symptoms of lung irritation the condition would probably right itself. The other suggestions which he had to offer were that improved ventilation, fans, aspiratory apparatus, and the more frequent use of water, both in grinding and cleansing the hands and person, should be generally recommended, and possibly enforced.

Dr. A. E. BARNES (Sheffield) said that the disease was always tuberculous. Pneumoconiosis was never serious unless there was a superimposed infection of tubercle. He knew that that view was opposed to the doctrines laid down in text-books, but every authority in Sheffield had now accepted it. Practically, not more than 1 case in 50 was due to dust *per se*. The question arose, Why, then, did grinders die so frequently from tubercle? and the answer was that the dust in which they worked acted simply as an efficient carrier for the bacillus. Coal-dust and sulphur-dust were less effective transmitters and workers in them did not get tuberculosis. His view was supported by the frequency of fatalities in the same workshop. In some workrooms it had happened that every man had died, and the deaths were shown to be due to ordinary infections of tubercle. In Sheffield the regulations against spitting were openly and flagrantly disregarded, and if men could be induced or compelled to observe the primary rules of health nothing else would be necessary.

Dr. J. NIVEN (medical officer of health of Manchester) said that Calmette's results as to intestinal infection could not be sustained. It was impossible to believe that no trace of the passage of such quantities of foreign material through the mesenteric glands would remain. They were, besides, contrary to the results of Koch's experiments, in which he had produced tuberculous patches in the lungs of healthy guinea-pigs merely by atmospheric contact with infected animals. In these cases the lesions were primary and isolated, and the experiments had been fully confirmed by other observers. It would be absolutely ineffective to destroy the tubercle bacilli in a workshop unless all dust was removed at the same time.

Dr. E. W. D. KITE (Hillsborough) said that silicosis had been very prevalent in his district, where much of the stone known as ganister was broken up for road-making. Owing, however, to precautions which had been taken the disease had now completely disappeared. Fans had been installed and water was kept playing on the grinding machinery and on the material, and although this added somewhat to the expense employers fully recognised that prevention was profitable. The British workman, however, had to be protected against himself.

Mr. ELLIS BARKER (London) said that the cause of the better conditions in Germany was to be found in the fact that there was a joint interest between masters and workmen in the preservation of health. Both sides were equally eager to prevent disease, and both contributed to a fund which was administered by a joint committee. From the fund compensation for sickness was paid to incapacitated employees, and it was the interest of both sides that the demands on the fund should be as small as possible. There was, besides, a system of fines which were imposed by the workmen's committee on offenders against sanitary regulations. If a man spat on the floor of a workshop, for instance, he was fined by the other men and not by the master, and the punishment was therefore a deterrent without being a grievance.

Mr. H. DE C. WOODCOCK (Leeds) called attention to the fact that the Jews in Leeds, although they worked little at dusty trades, suffered very severely from tuberculosis and were much more liable to the disease than Englishmen.

Professor LLOYD (Professor of Economics, University of Sheffield) said that he regarded Dr. Barnes's view that it was unnecessary to remove dust with considerable alarm. His opinion as a layman was that no progress could be made until dust was effectively removed. A comparison between Solingen and Sheffield might be misleading, for it was not workshop conditions alone which influenced results. Solingen was a new town, built on a hill, with excellent sanitary arrangements; life also was less strenuous there and there was greater temperance among the workpeople, while the enforcement of voluntary rules contributed in no small degree to the cumulative effect of coöperation in the preservation of health.

Mr. ELLIS BARKER pointed out that the rules which applied to Solingen applied to all dusty trades everywhere in Germany and Solingen did not compare favourably with other centres of industry.

Dr. W. P. KENNEDY (Bath) and Dr. A. E. NAISH (Sheffield) having spoken, Dr. SCURFIELD replied. He said that no doubt it was the case that if a man who had contracted pneumoconiosis lived for some time he was almost certain to die ultimately from a super-imposed tubercle infection. Dust, however, was the cause and practically the only

cause of his disease. If that were not so, why did the worker infect his mates but not his wife?

Mr. CYRIL JOHNSTON, His Majesty's Inspector of Factories (Sheffield), described

The Methods which had been Adopted for the Prevention of Dust in Factories and Workshops.

His paper was illustrated by lantern slides showing micro-photographic reproductions of the various forms of dust which were incidental to different trades and by a large number of views of factories with men actually at work. Grinding by unprotected and by protected stones was graphically depicted and an apparatus for the prevention of dust which had recently been introduced into some of the workshops in Sheffield was also shown on the screen. Mr. Johnston said that the operation of "racing" a stone, which had formerly been accompanied by clouds of dust, was now possible by means of this device in a practically pure atmosphere and in a much shorter time. "Racing" was the removal of the rough surface of the stone in order to make it suitable for grinding. In the minor processes of cutlery, such as the glazing of bone, pearl, and wood handles, the grinding was mostly done on wooden wheels which were covered by emery paste on a leather strap, and the dust from these small wheels was even more noxious than that from the large grindstones. Exhaust apparatus and fans could, however, be still more easily applied to small wheels.

The PRESIDENT said that the special thanks of the section were due to Mr. Johnston for the excellent demonstration which he had given and for his account of the investigations which he carried out on this most important subject.

Dr. PROSSER WHITE read notes of a remarkable case of

Aniline Poisoning.

which had occurred recently in his practice. The most notable phenomena were that the urine had remained acid for six weeks after it was drawn, that it showed no traces of decomposition, and that it contained no albumin, aniline, urobilin, or amido-benzine. The case was one of very great toxicological interest and he hoped to be able to publish a full report later.

OPHTHALMOLOGY.

WEDNESDAY, JULY 29TH.

The PRESIDENT, Sir HENRY ROSBOROUGH SWANZY (Dublin), took the chair, and after expressing his pleasure at the number of members and visitors in attendance, said that he would suspend an opening speech in favour of the immediate introduction of the discussion, the subject of which was of great interest—viz.,

The Relation of Disease of the Nasal Accessory Sinuses to Disease of the Eye.

Dr. A. LOGAN TURNER (Edinburgh) first gave a most exhaustive demonstration by sections of the head taken in various planes of the anatomical relations of the orbit with its surroundings by means of lantern slides. He pointed out that the orbit was nearly completely surrounded by the large air spaces connected with the upper respiratory passages. Only on the outer wall was the bone deficient in these air cells or sinuses. These air cells could be divided into two groups, an anterior and a posterior. This division was useful both anatomically and clinically. The anterior group comprised the frontal and anterior ethmoidal cells and antrum, and these had orifices into the middle meatus of the nose. Disease of the anterior group affected the eye directly by compression and displacement. The posterior group were made up of the sphenoidal and posterior ethmoidal cells, and these empty into the superior meatus; disease of this group was most serious in that the cells were closely related to the optic and oculo-motor nerves, being separated from them by the thinnest bony septa; indeed, in some cases the bony walls were incomplete and the cavity of the cell and the nerve would be separated by thin layers of lining membranes which were easily permeated by suppurative processes. Another anatomical feature of these sinuses, which formed a peculiar difficulty as regards exact diagnosis of the site of lesions, was the irregularity of the position and relation of the cells both to the median line and to the roof and floor of the orbit—e.g., the frontal sinus of one side might overlap and form the wall of the opposite orbit, or the ethmoidal cells might form more of the air space in the roof than the frontal, or they might jut in between the antrum and the floor of the orbit. These were all hindrances to exact diagnosis and necessitated a constant alertness in operation, for the unexpected was constantly cropping up. The venous distribution was of great importance. All these air sinuses had a venous return which passed into the orbit and thence by the ophthalmic vein into the cavernous sinus; less was known of the lymphatic circulation.

Dr. GEORGE MACKAY (Edinburgh) dealt with the ocular side of these diseases. He suggested that they should be considered in the following groups for clinical convenience:—Group I.: Mucoceles of the accessory sinuses. Group II.: Sinusitis, acute or chronic, accompanied by obvious external signs of orbital cellulitis, abscess formation, tumour growth, œdema of lids, or apparent dacryocystitis. Group III.: Sinusitis without external signs of inflammation in the orbit or neighbouring tissues, but (*a*) with ophthalmoscopic signs, such as optic neuritis, neuro-retinitis, retinal thrombosis, or phlebitis, &c.; and (*b*) without ophthalmoscopic signs but with disturbances of vision, such as central scotoma or limitations of the field of vision, paralyses of ocular muscles, or disturbances referable to the fifth nerve. Group IV.: To this group might be relegated cases in which the association with sinus disease had been asserted but was more questionable, such as glaucoma, iritis, uveitis, keratitis, and opacities of the lens and vitreous, &c. In dealing with Groups I. and II. attention was called to some of the causes of sinusitis. The necessity for studying the paths by which inflammation or neoplasms spread from the sinuses into the orbit was emphasised in its bearing on the appropriate surgical treatment. Subperiosteal operation should be preferred where possible. Discussion was invited as to the means of differentiating between orbital cellulitis due to sinus disease and other causes, such as syphilitic or tuberculous periostitis. The difficulty of recognising the presence of empyema in the absence of nasal symptoms or of obvious orbital mischief was commented upon in connexion with Group III. (*a*) and (*b*) and Group IV. The necessity for some rhinological training on the part of the ophthalmic surgeon was urged. Much conjoint investigation by ophthalmologists and rhinologists would be required before the diagnosis of these obscure cases might be made with confidence from their associated signs and symptoms or the recognition of their possible concurrence but independent origin be appreciated. Clinical communications were invited on some of the dubious questions involved and an expression of opinion as to the relative positions of the rhinologists and ophthalmologists in the surgical treatment of these cases.

A large number of photographs of cases demonstrating clinical conditions were shown.

Dr. STCLAIR THOMSON (London) read a paper on

The Causes and Symptoms of Thrombosis of the Cavernous Sinus.

First he referred to the anatomical relations of the blood sinus; it was in intimate relations with all the other vascular sinuses, with the great nerves, and with the upper air cells. For the most part he considered that diseases of the ear and nose were responsible for thrombosis of this great blood sinus; to a much less extent were infections from surface conditions concerned. Although ear and nose were so intimately related with the onset of the condition, the earliest symptoms of its incidence were nearly always ophthalmic, so that the eye surgeon, with rare exceptions, had the honour of initial diagnosis. It was true that in the earliest stages of the condition there was a complaint of headache, malaise, or some rise of temperature, but it was not until papillitis, chemosis of the conjunctiva, and proptosis were noted that one could conclude there was a serious cause for the general symptoms. In some severe and early fatal cases chemosis and proptosis of the eyeball were not noted, and then the papillitis and the severity of the cerebral symptoms had to suffice for an indication of cavernous disease.

Mr. SYDNEY STEPHENSON (London) read a paper on

A Case of Thrombosis of the Cavernous Sinus.

A man, aged 27 years, had suffered for some time from a thick nasal discharge. A throat specialist detected a polypi of the right nostril, profuse discharge of pus from the middle meatus, some inflammatory condition of the right ear, and a growth of uncertain nature of the right vocal cord. Later his symptoms became urgent: there were fever, severe pain, and malaise. On April 23rd the right eye

became proptosed, the next day the left eye also, and the right mastoid region was tender and swollen. A fortnight later there was another similar but worse attack, and it was then he first saw the case. Both globes were much proptosed, the retinal vessels were engorged, and the discs were hazy. There was fair vision. A diagnosis of cavernous sinus thrombosis was made. The condition rapidly became worse with symptoms of pyæmia. An abscess developed at the root of one of the fingers. Death occurred on the twenty-third day. Post mortem pus was found on the surface of the brain, along the Sylvian fissure, and over the anterior fossa. Both the cavernous and circular sinuses were filled with pus and some organised clot. The sphenoidal and ethmoidal air cells contained pus, but the antrum and the ears were found to be healthy. It was concluded the disease arose in the ethmoidal or sphenoidal sinuses. Bacteriologically, the pneumococcus was found in the cranial pus, but only the staphylococcus in the abscess of the finger.

Dr. W. S. SYME (Glasgow) commented on the facility with which disease of the nose was communicated to the lacrymal sac by way of the nasal duct and also of the marked disturbance of the visual apparatus by mucocele of the anterior air cells. By far the most interesting and important cases were those of retrobulbar neuritis due to disease of the posterior cells, and the urgency for release of pent-up secretions within these cells warranted the closest endeavour of ophthalmologists and rhinologists in the detection of these difficult cases.

Dr. ARTHUR GREENE (Norwich) narrated the case of a boy aged eight years who contracted left ethmoidal disease subsequently to an attack of scarlet fever. A swelling appeared at the inner canthus; it was cut down upon and entry was effected into the upper air cells; muco-pus escaped. Although the cavity was drained it showed no sign of closing and further operation such as drainage into the nose was refused. By means of the x rays it was determined that the frontal sinus was not affected. The case had lasted four years.

Professor AXENFELD (Freiburg) remarked that transient attacks of inflammation of the lining membranes of the posterior air cells might be frequently accountable for retrobulbar neuritis, even though there was no closure or empyema of these cells. This was probably due, as Dr. Turner had pointed out, to the frequent deficiency of the bony walls of the groove in which lay the optic nerve. It was notorious how frequently it was asserted that chills had marked the onset of attacks of retrobulbar neuritis, and he thought that affection of the air cells was the connecting link. On the point of exploration and draining of affected air cells in case of eye disease, he thought that the matter was properly within the province of the ophthalmic surgeon, and that he should be prepared to examine the nose thoroughly in any suspicious case and treat it himself. The old idea that the field of eye surgery was bounded by the bony walls of the orbit was exploded long ago, in fact, as soon as the eye surgeon adopted Krönlein's operation as being within his particular province.

Dr. A. BRONNER (Bradford) remarked on the frequency with which asthenopia was associated with chronic rhinitis. He also commented on the dangers of cases where the diseased sinus was closed, so that no pus was seen on examining the nose. That nothing could be seen in the nose did not imply the health of the accessory sinuses. He remarked on the absence of cavernous disease after operations on the eye for panophthalmitis.

Professor FUCHS (Vienna) showed from clinical experience that it was often warrantable to open and to explore the air cells in the region of suspected mischief, even though the inspection of their nasal surfaces and orifices suggested that they were healthy.

Dr. LOGAN TURNER, in reply, said he agreed with Professor Fuchs that it was often necessary to open an air cell to make certain of its health, but he felt that the necessity for this depended upon the insistence of the ophthalmic surgeon on the general location of the disease. He thought that such explorations and treatment should only be undertaken by those who were habitually treating the nose.

Dr. G. MACKAY referred to the expression of opinion that infection of the cavernous sinus from the superficies was rare. He had recently seen a case of a boy, the son of a tanner, who contracted anthrax of the forehead which produced a typical case of venous thrombosis of the sinus.

Dr. STCLAIR THOMSON cited a case where the washing out of the sphenoidal sinus was followed by a resolution of retrobulbar neuritis of the other side, as an illustration of the benefit to be derived from the prompt treatment of these cases.

Professor FUCHS read a paper on

Glaucoma as a Sequel to Leucoma Adherens.

It was admitted that increased tension was not an unusual sequel to the production of anterior synechiæ or leucoma adherens, and that this was caused by the obliteration of the angle of the anterior chamber. His endeavour had been to ascertain how the blocking of the angle was brought about and why increase in tension occurred in some cases and not in others apparently exactly similar. It appeared that inflammation of the cornea caused a thickening or bulging inwards of the pectinate ligament, which was met by a fold of swollen iris; the two adhered and formed a ring-shaped canal, after the manner shown by Priestley Smith. This canal was liable to complete obliteration or filling with lymph. If the cornea did not perforate, re-formation of the angle was likely, but if it did perforate the blockage was permanent, for the loss of the aqueous brought the swollen iris into direct contact with the inflamed cornea, a contact that was effective by reason of the forward pressure of the inflamed ciliary processes and perhaps also of the contents of the posterior chamber. This application might proceed to adhesion, in which case the epithelium of the cornea and iris was lost and the surfaces united, either directly or by the interposition of a thin layer of new tissue. Of 19 eyes which he had examined in which there was present a flat leucoma adherens only one showed an open angle throughout the whole circumference of the anterior chamber. In all other cases the angle was altered at that part of the circumference corresponding to the anterior synechiæ, while in some cases other parts of the angle were affected. In most cases there was complete obliteration opposite the adhesion; in only a very few did a ring-shaped canal persist. Adhesions affecting the root of the cornea caused complete adhesions of the iris to the cornea, those at the pupillary margin caused adhesion up to the limit of Descemet's membrane, the rest of the iris stretched as the cord of an arc between the two adhesions. In regions of the iris not corresponding to the leucoma the angle of the chamber was differently affected. In certain cases the angle was normal, while in others it was altered. Either there was a ring-shaped adhesion near the root of the iris that left a canal around the angle or else this region was blocked by adhesion from the root of the iris to the margin of Descemet's membrane. Where in life there had been increase of tension in the eyeball the adherent iris was atrophic and stretched; where there had been no abnormal tension the iris remained healthy although adherent. It was remarkable that there should be so many cases with a real anatomical blocking of the angle of the anterior chamber apparently all round and yet no secondary glaucoma. In one of these cases the leucoma adherens had been caused 38 years before the eye was excised for epithelioma, and although there was peripheral adhesion all round the tension was normal and the optic nerve showed no signs of cupping. He thought there were two ways of explaining this phenomenon. They might surmise that the adhesion was not complete and that a sufficient free opening remained to carry on the drainage. Further research was required on this point. Or they must admit that a complete peripheral synechia did not in a noteworthy degree impede the elimination of the aqueous humour, for in these cases, contrary to what was found in glaucoma, the iris tissue remained healthy. The iris tissue was in open communication with the aqueous chamber by its crypts and was soaked with aqueous humour, which was under the same pressure as in the chamber itself. The aqueous humour in the iris was thus separated from the ligament only by the anterior layer of the iris which was attached to the ligament, and this being of loose texture did not prevent filtration. In cases of increased tension the tissue of the iris was profoundly altered and was such that filtration was practically impossible through it.

The PRESIDENT thanked Professor Fuchs for his paper which he thought threw an interesting light on the theory of glaucoma.

Dr. W. B. INGLIS POLLOCK (Glasgow) said that in a case similar to those described by Professor Fuchs he made serial

sections and found part of the drainage angle open so that tension remained normal.

Mr. STEPHENSON asked whether the ciliary body was atrophied in these cases, for such a condition would balance the intra-ocular tension.

Dr. J. A. CRAIG (Belfast) remarked on a case where subsequently to a cataract extraction there were adhesion to the cornea of the bases of the pillars of the coloboma, a diminution of vision, and a progressive increase of tension until the eye was lost by glaucoma. Further operative treatment was refused.

Professor FUCHS replied that in all his cases the ciliary body was healthy; there were no other pathological changes than those he had given. He thought his cases showed that if there were tension then there were compression and atrophy of the adherent iris, but that in other cases there could be transudation of the aqueous through the iritis adhesion into the canal of Schlemm, and in one case this state had persisted for 38 years.

Dr. INGLIS POLLOCK read a paper on

Monocular Diplopia.

He said that all cases arising from optical conditions in the anterior segment of the eyeball might be separated into two groups—the first with double pupil and the second where irregular refraction by the cornea and lens produced two or more images on the retina (monocular polyopia). The first group included such conditions as a band passing across the pupil, whether congenital in origin or due to inflammatory processes, or the condition of irido-dialysis. In these cases diplopia only occurs if the object was out of focus for the eye. Among the second group were a number of varied affections. The lens when dislocated so that the edge passed across the pupil always caused monocular diplopia. Both images were out of focus, the one formed through the margin of the lens was as if myopic, while the other due to the aphakic condition resembled hypermetropia. Irregular corneal refraction from old superficial ulceration occasionally gave rise to diplopia, but generally of an indefinite character. It was more persistent than some of the other forms. That due to irregular lenticular astigmatism was comparatively rare except when due to incipient cataract. Dr. Pollock had had a case in a child with congenital cataract. Irregular lenticular astigmatism also explained a case of diplopia occurring in ophthalmoplegia interna in a young man, aged 30 years. The diplopia had persisted to the present time since first observed four years ago. The question of the possibility of the retinal origin of monocular diplopia was most interesting. Constentin reported a case where diplopia occurred due to detachment of the retina the entire upper portion of which was applied to the lower half of the retina, the latter still being *in situ* and the light thus affecting two portions of the retina at the same time. Dr. Pollock's case was that of a woman with double choked disc. She had diplopia in one eye during the early stage of regression of the œdema, and he advanced the theory that the diplopia was due to a shrinkage of the retina, which caused slight wrinkling of the layer of rods and cones at the macula. Light converging to a focus would then affect two neighbouring regions and so produce the diplopia.

Mr. A. W. ORMOND (London) said that he had seen two cases of monocular diplopia in optic neuritis, which went to support Dr. Pollock's theory.

Mr. CYRIL H. WALKER (Bristol) asked whether the separation of the two images seen remained relatively constant at whatever distance the object was seen.

Dr. POLLOCK replied.

PSYCHOLOGICAL MEDICINE.

WEDNESDAY, JULY 29TH.

The PRESIDENT, Dr. W. S. KAY (Wadsley), after a few remarks, called upon Dr. T. CLAYE SHAW (London) for his paper on

The Question of the Treatment of the Habitual Drunkard (Legislative and Otherwise).

The word "drunkard," as far as Dr. Shaw's purpose went, implied the drinking of alcohol in some form to excess and did not include drugging by hypodermic medication, inhalation, &c. Some people preferred the term "inebriate" because it was less opprobrious and more comprehensive and applied to both alcoholic inebriates and drug habitués, but it did not appear that there was any particular reason for sparing the feelings of those who indulged to excess. It so happened that a Royal Commission was now sitting on this particular question; the date of this Commission had been fixed subsequently to the publication by this section of the intention to discuss the subject. The scope of this Commission was very large and would, he understood, be extended to take evidence from many societies and individuals, including even some who were not recognised in medical circles as professional exponents of the subject. Not only had the British Medical Association itself been for some time actively concerned with the question now under consideration, but the Society for the Study of Inebriety, the Medico-Legal Society, the Medico-Psychological Association, proprietors of secret remedies, and other bodies, were to lay their views before the Commission. He hoped that some practical result would be arrived at by this section in the direction which the consensus of those most intimate with the facts seemed to point to—viz., the necessity for the authority to use restraint when it was required—and that the section's expression of opinion might be brought before the Commission as the deliberate conviction of a body of men who were intimately acquainted with the circumstances about which they are deliberating. He did not propose to discuss the medical treatment of the habitual drunkard, not because he believed medical treatment to be altogether a failure; on the contrary, the records of some of the inebriate homes where medical treatment was carried out might be quoted to prove the great value of remedies in some cases, but because they had already as much power as they wanted for the application of medical agencies. What they required was the possibility of obtaining a lengthened time during which remedies (if necessary) might be applied. A discussion on the most efficacious treatment of inebriety by drugs was well worth the attention of any society, but they were all probably agreed that whilst the less legislative control there was over this strictly medical point the better (he was speaking then of properly qualified and registered practitioners) the time had arrived when for the sake both of the patient and his social surroundings it was necessary to have means at hand for the forcible control and detention of a person upon whom, whilst drugs had been tried and conspicuously failed, the curative elements of time and enforced abstinence from stimulants might have a reasonable chance of operating. Sec. 3, clause 3 (*b*) of the Act read as follows: "Habitual drunkard means a person who not being amenable to any jurisdiction in lunacy, is notwithstanding, by reason of habitual drinking of intoxicating liquor, at times dangerous to self or others, or incapable of managing himself or his affairs." As practical men conversant with the various altered mental conditions in which acute or chronic inebriety showed itself, they all recognised that whilst there were actual insanities produced by alcohol which required and were easily placed under certificates for asylum treatment, there were yet others which though not certifiably insane required compulsory sequestration for their own and others' safety. They also knew that mental troubles caused by alcohol had a way of recovering in a most surprising manner when all alcohol was withdrawn and that under the present state of the law it was not possible to detain these people, though they knew that to discharge them was to invite a speedy return to the deplorable conditions which before existed, so that if legislation was to be of real value it must be both corrective and preventive. Their interference was required for persons who drank to excess—perhaps constantly, perhaps intermittently—who, though rarely drunk in the sense that they were absolutely incapacitated, were yet unable adequately to discharge their obligations, who squandered the money which should be for the family in racing, betting, and gambling, who passed much of their time in bed when they should be following their business, and who through absence of definite delusions or hallucinations could not be certified as insane, who were ready to give promises of reformation which they did not keep, but who were always on *dangerous ground*, on the verge of doing something which rendered them liable to penal offences though quite able to give plausible accounts of their conduct and to sustain a certain amount of conversation on their actions. This was the condition where they wanted the law to help them, not only for the sake of

the agent but for those who were being slowly submerged and threatened with total extinction by a continuous current of banal excess which should be dammed up or diverted. Why should this destructive, grinding, and oppressive creature be allowed to desolate his home, to endanger the good name of his wife and children, and to pauperise his dependents who ought to have the means of staying the destruction which they could see was gradually overtaking them? At present the law took no notice of acts unless they actually caused harm to self or others, not of continued evil practices which might do harm. There was apparently nothing to prevent an inebriate acquiring a licence to carry firearms and buying a revolver as long as he neither threatened to, nor actually did, use it; only when he had used it did he come within the clutch of the law, though all the time he was in such a condition that the impulse to use it might arise at any moment and the mischief be done before it could be prevented. Was such a possibility right either for the man himself or for society in general? He came now to the legal processes which should be invoked, remarking in the first place that there was a dual control—viz., that of the Secretary of State, who regulated the management of the retreat and the duties of inspection, and the county and borough councils which were the authorities for the granting of licences. He was able to state that the experience of those versed in the working of these retreats was that this dual control was for many practical reasons unsatisfactory, and that to the Secretary of State alone should be committed the power to grant, to transfer, or to withhold licences, and, moreover, that compulsory licensing of all retreats should be made absolute. The question had been raised whether it would be of advantage to grant licences to lunatic asylums for the reception of habitual drunkards. He begged to suggest that it would for the following reasons. In a paper read before the Medico-Legal Society on Dec. 17th, 1907, he remarked that when a person insane from alcohol had been placed in an asylum and had so rapidly recovered that he could no longer be detained, it should be possible for the governing authorities to discharge the patient for a term of probation to an inebriate home, the term to be capable of extension as long as was considered necessary. He still thought that removal to the home would be a good thing for the well-to-do person who might have been placed during his attack of insanity in a private asylum, but in the case of the pauper patient the advantage of removing him to the part of the asylum licensed for the reception of inebriates would be a cheap and expeditious way of keeping him under supervision, whilst it would free him from the company of actually insane persons and it would prevent the stress put upon the accommodation at existing inebriates' homes and the expense would be lessened. For a private patient whom it was not expedient or even possible to confine in an asylum he would have the powers granted to place him in a home upon the authority of two medical certificates, somewhat similar in form to lunacy certificates but free from certain objectionable phrases which existed in the latter. These certificates should be available for at least six months and should be capable of renewal for additional terms of six months if considered necessary by the authorities of the home. Whilst under these certificates the patient would be allowed to transact such business as he was deemed capable of by the home authorities and their superintendent, but special permission would have to be given for these acts of responsibility, and during the time of his detention all personal liberty would be denied except by special permission of the superintendent. A question arose as to the propriety of having the order of commitment to the home signed by the next-of-kin. It would probably be better for the future family harmony if the immediate members could be kept clear from unpleasant participation in the detention of the head of the house, but on the whole it was probably only right that the friends must undertake some responsibility, and therefore it might be concluded that some authorisation from a near relative must accompany the certificates, either as a separate document or conjointly with those of the certifying medical men. The advisability of having the order of a magistrate was also a debateable point. Experience of certification in lunacy cases was not entirely in favour of having a magistrate's order, for in urgency cases it was not in the first instance required. If the order of the magistrate was understood to be nothing more than a formal official cachet that a certain process had been complied with there would appear to be no reason beyond the question of delay why it should not be made compulsory, but if it was to involve discretionary power then the possible harm of requiring it was apparent, because the arbiter was not always in a position to adjudge the validity of the premisses. The patient thus compulsorily secluded ought to have safeguards. Whilst under detention he would be visited by the Government inspectors and he would have his legal remedies for improper certification just as the lunatic now had. He noted that the departmental committee on the Inebriates Act had issued a series of questions for the guidance of witnesses submitting evidence before it, and from the scope of these questions it was evident that the whole subject of new legislation in regard to the taxation and licensing of retreats, the compulsory certification and seclusion of habitual drunkards or inebriates, their employment and treatment when in retreats, &c., was receiving the fullest consideration, but he ventured to suggest, with their permission, that a resolution embodying the views of this section of the British Medical Association on the question of the urgency of compulsory legislation in the cases under consideration might be presented to the council with a view to its being brought before the notice of the departmental committee with the object of reinforcing such testimony as was brought before it in favour of this proceeding. Section D of the "Questions" said: "In view of the fact that 1879 Act only empowers the detention of inebriates when they themselves desire treatment, and the 1898 Act only when the inebriate becomes criminal or degraded, are you of opinion that further powers are necessary to authorise the treatment, guardianship, or detention of inebriates who cannot be controlled or treated under any existing power?" Surely their answer could only be that they did think so and that whether the means employed were by certification or by inquiry on commission (as had been urged by one very experienced prison physician) they must do all in their power to back up such efforts as were being made to attain this end. He concluded by saying that they could teach people the necessity for moderation, but alcohol was always a dangerous instrument and they could not be surprised if some who did not know how to use it as a servant found that it became a tyrannous master. Drunkenness might not be the end for which alcohol was taken, but the social system which permitted the insidious ensnarement, welling up finally in a paralysing incompetence for economic duties, should also provide the means of escape from the net if even by temporary restraint of another kind, and it should resolve that the possession of such a power was not a futile asset. There was really nothing novel in legislating to effect the compulsory detention and control of these persons except that this country already lagged behind numbers of others, whilst in some places (he was now quoting from particulars furnished by Mr. F. S. D. Hogg, medical superintendent of the Dalrymple Home at Rickmansworth) still more stringent laws were in action, because a habitual drunkard who was obliged to seek help from the authorities to support himself or his family was liable to arrest and might be placed in a workhouse for a term not exceeding two years. To carry out with all due safeguards the measures above proposed was not asking too much in the way of public expenditure because the private patients would be able to pay, and if the present homes for pauper inebriates were not sufficient it would be possible to make use of the machinery of the present county asylums by adding a little to their accommodation.

The Inebriates Acts, 1879–1900.

A paper was then read by the Honorary Secretary of the section for Commander C. S. SCOTT, chief constable of the city of Sheffield, on Recent Inebriate Legislation. Commander Scott pointed out some of the causes which seemed to militate against the successful operation of these Acts. The Habitual Drunkards Act, 1879, authorised justices to license "retreats" to which habitual drunkards might be admitted on their own application. It also defined the meaning of the term "habitual drunkard." Rules could be made by the Home Secretary and penalties could be inflicted for breach thereof. The Inebriates Act, 1898, set up State and certified inebriate reformatories—the former run by the State, the latter by private individuals, corporations, or similar bodies, and arrangements were made for their

upkeep and maintenance of persons detained therein out of the rates with a subvention from the Treasury. Section 1 of this Act provided that persons convicted on indictment for offences punishable by imprisonment or penal servitude—if these offences were brought about by drink—might be sent to the State or other certified inebriate reformatory. Section 2 provided that persons convicted summarily at least three times during the preceding 12 months of other minor offences, such as drunk and disorderly, drunk in charge of a child, &c., might be sent to an inebriates' reformatory. For some reason this latter Act of Parliament never received adequate recognition. When it first came into operation the reformatories were not ready and probably the South African war had diverted their attention. It was the Licensing Act of 1902 which first reminded them of the Act of 1898 and referred them to the Act of 1879. It realised that for the first time someone other than the inebriate was to be benefited. The husband or wife was enabled to obtain a separation order and other privileges. Commander Scott exemplified some of the difficulties of the Act from his experiences at Sheffield and related cases of convictions of habitual drunkards who nevertheless could not be consigned by the magistrates to a reformatory. Moreover, unless he consents to be dealt with summarily a person charged can only be tried on indictment at quarter sessions or the assizes, and to obviate this trouble and expense a sentence of imprisonment is substituted and thus a fruitful source of failure of the Act arose. Commander Scott referred to certain extracts from the report of His Majesty's inspector under the Inebriates Acts for the year 1906, showing the need for reformatory treatment as a curative measure. He was also of opinion that medical agencies should not be discountenanced in the treatment of habitual drunkards. He suggested that Parliament should be petitioned to appoint a Royal Commission to inquire into the efficacy of other methods of treatment for habitual drunkards, and if any of them were found to be of value should direct that the inebriate on committal might be sentenced to detention as heretofore and to undergo such treatment, and that the Home Secretary should have power to release on licence such inebriate at any time on the certificate of the medical officer in charge, with power also to rearrest immediately the terms if such licence were broken.

Mr. J. STEWART (London) was sceptical whether any real benefit could be derived from the use of drugs in cases of inebriety. This term he regarded as applicable to diseased conditions requiring a lengthened period of treatment in homes as compared with cases of occasional drunkenness the result of a vicious habit.

Dr. J. WARD COUSINS (Portsmouth) traced the evolution of our ideas as to the effects of alcohol. In former years alcohol was given to stay the depressing effects of disease. It was now shown that alcohol was destructive to all the tissues of the body and that its first effect was on the digestive system.

Dr. J. S. BOLTON (Nottingham) believed that the present elaborate machinery of legislation was all too late. He considered that the family practitioner could step in and prevent alcoholism in his patients by wise counsel and by the use of drugs, particularly by subcutaneous injections. The restlessness and craving could be remedied. He recommended apomorphine in five-minim doses hypodermically to obtain sleep and that a sedative effect should be established by large doses of bromide. He continued this treatment by hypodermic injections of strychnine, gr. 1-20th, and atropine, gr. 1-100th, for a period of time, to be followed by capsicum and cinchona as a tonic medicine if any sign of relapse manifested itself. The ultimate success of treatment depended on the building up of the character of the patient.

Dr. T. N. KELYNACK (London) supported Commander Scott's suggestions most cordially. He hoped that the word inebriate would be used rather than habitual drunkard, which was offensive to some people and alienated their sympathy.

Mr. J. Q. DONALD (Fife) deprecated the use of hypodermic injections in the treatment of inebriates. They were only too apt to become addicted to other drugs by becoming used to the action of the hypodermic syringe.

Dr. H. G. SHORE (Newquay) considered the liberty of the subject was regarded as a social fetich in the treatment of the inebriate, while the liberty of the wife and family of a drunkard was not sufficiently taken into question.

Dr. F. E. WYNNE (Leigh) stated that all were agreed that alcohol was a dangerous commodity. He thought that the time might come when the licence might be transferred from the publican to the consumer, who would forfeit such licence if any abuse resulted from drinking alcohol.

Dr. BEDFORD PIERCE (York) pointed out that inebriates as a class were not as a rule mentally defective, that they were often impossible to certify as insane, and that to certify as fit for restraint in a home might involve several examinations as the periods of remission were often marked.

Mr. G. E. MOULD (Sheffield) suggested that a family council should be held, as in France, to involve joint responsibility of relatives in placing an inebriate under restraint.

The following motion was then put to the meeting by Dr. CLAYE SHAW, seconded by Mr. STEWART, and carried:—

That the members of the section of Psychological Medicine of the British Medical Association are of opinion that the time has now arrived when legislation for the compulsory detention of habitual drunkards in retreats, homes, or other licensed houses is urgently required, in the interests both of the patient, of his family, and of society in general. The section desires to present this resolution to the council of the Association with the view to its being adopted and forwarded to the departmental committee on the Inebriate Acts now in session.

Dr. A. T. SCHOFIELD (London) read a paper on

The Psychology of Neurasthenia and Hysteria.

These were not true mental diseases, though, as he would show, there was a link between these functional nerve diseases and insanity. The whole subject was in chaos till 50 years ago and had not yet finally emerged. He would confine himself to the two disorders, neurasthenia and hysteria. They were first distinguished by Professor Whyte in Edinburgh in 1765, but neurasthenia had not been generally known as such in England for much more than 20 years, and the present distinction between it and hysteria was principally due to work done in France and America. Neurasthenia was simply weakness or exhaustion of the nervous system and the chief predisposing cause of this was hereditary weakness or overstrain. It was doubtful if the disease was primarily dependent upon the rush of modern life. He might sum up the exciting causes under five heads. 1. Poisons from without, such as influenza, alcohol, drugs, and zymotic diseases; and from within, such as dyspepsia, constipation, enteritis, &c., 2. Malnutrition, deficient food, wasting, anorexia, &c. 3. Fatigue from overwork, worry, insomnia, pain, sexual excesses, &c. 4. Emotional strain from shock, grief, accident, love, religion, &c. 5. Reflex causes—enteroptoses, eye-strain, cardiac weakness and psychic causes, and bad environment, suggestion, &c. The more apparently mental symptoms in neurasthenia such as phobias and obsessions generally arose from cerebral fatigue, sexual excesses, and poisons. The psychological concept of neurasthenia was a weakness rather than actual disease of the central nervous system, the brain being first attacked, then the spine, and then the nerves. In hysteria they had a different state of things altogether and dealt with disease or distinct disorder of the nervous system often with no symptoms of fatigue at all. All authorities concurred that it was a disease of the higher nerve centres though most diverse views were held as to its nature. Hysteria abroad was mainly characterised by a narrowed consciousness of common (anæsthesia) and special sensation (field of vision). In England it was far more associated with neuromimesis or the mimicry of disease. It was quite clear that the conscious mind was not the part affected in this disease, hence it was not a variety of mania or insanity. Sir James Paget pointed out that so to regard hysteria was bad pathology and worse practise. At the same time it was at bottom a psychosis and not a mere neurosis. In neuromimesis especially they saw mental concepts of disease carried out unconsciously by the patient. This was one of the strongest proofs of the unconscious mind. There could be no doubt that hysteria was at the bottom a disease of the unconscious as distinguished from the conscious mind. He might therefore draw this parallel between insanity and neuromimetic hysteria. The former was an aberration of the conscious, and the latter of the unconscious, mind, the remaining parts in each case being sound. Hysteria, then, was essentially a psychosis as distinguished from neurasthenia—a neurosis—and it was caused by a functional derangement or disease of the unconscious mind, accompanied by a loss of control of the higher cortical centres.

Dr. SHORE and Dr. CLAYE SHAW joined in the discussion. The latter regarded cases of neuromimesis as due to some disorder, possibly from loss of nerve potential or circulatory alteration in the central nervous system whereby representation of organic lesions resulted.

Dr. SCHOFIELD replied.

THE ANNUAL EXHIBITION.

II.—DRUGS.

On the whole the exhibits of drugs contained a good many old friends but here and there it was not difficult to pick out certain productions which presented something fresh either in the direction of the form of administration or perhaps of a modification of the original compound which is calculated to effect a therapeutic improvement. Generally speaking, the space devoted to drugs was distinctly smaller than has been the case on previous occasions. It is satisfactory to note that special attention is being given to the physiological standardisation of drugs, such as the extract of the suprarenal gland (epinephrin), ergot, digitalis, and so on. In this connexion may be mentioned the physiologically standardised drugs exhibited by Messrs. Brady and Martin, Limited, of Northumberland-road, Newcastle-upon-Tyne. On the stall were specimens of carefully standardised (physiologically) tinctures of digitalis, epinephrin, squill, ergot, strophanthus, and so on. There were also examples of fine chemical preparations, as, for instance, liquor bismuth co. cum pepsina, liquor cerii, and elixir calcii iodidi. Carefully standardised preparations (both chemically and physiologically, that is) were a feature also of the well-arranged stall of Messrs. Parke, Davis, and Co., of 50, Beak-street, Regent-street, London, W., who showed preparations of the powerful hæmostatic adrenalin (suprarenal chemical principle), fluid extracts for the production of standard tinctures by dilution, preparations of digitalis, aseptic ergot, and so forth. Added to these were various sera, vaccines, and tuberculin tablets for the ophthalmic diagnosis of tuberculosis. Messrs. Oppenheimer, Son, and Co., Limited, of 179, Queen Victoria-street, London, E.C., showed a very interesting collection of up-to-date preparations and also some approved forms of vaporisers to be used with the neboline compounds. Roboleine is described as a perfect emulsion of the red bone marrow from the long bones of the sheep and the expressed juice from the short rib bones of the ox in a highly diastasic extract of malted barley. A very active malt extract known as "hordine" was also exhibited, as were also the powder pills of this firm, known as pulverettes. There was an excellent display of fine pharmaceutical preparations on the stall of Messrs. James Woolley, Sons, and Co., Limited, of Manchester. These included a solution of the sedative principles of opium known as akolethe and said to be free from nauseous taste and unpleasant after-effects; a series of elixirs; malto-hæmoglobin; a formaldehyde lozenge for the purpose of a gargle; concentrated mixtures physiologically standardised; and specimens of soluble bougies, pessaries, ear cones, and cachets. There was no lack of novelty on the stall of Messrs. Meister, Lucius, and Brüning, Limited, of 51, St. Mary Axe, London, E.C., who exhibited a preparation called "emanosol," which is said to give off radium emanations and so to be useful in chronic rheumatism and gouty affections; an organic silver preparation known as albargin; and sajodin, a substitute for potassic iodide. In addition there was a selection of sero-therapeutic and bacterial preparations. Messrs. W. A. Wharram, Limited, of 115, Vicar-lane, Leeds, had a tastefully decorated stall on which was a number of preparations and appliances of interest to medical men. Similarly Messrs. Corbyn, Stacey, and Co., Limited, of 673, Commercial-road East, London, exhibited a fine series of drugs and chemicals exemplifying pharmaceutical skill and elegance. Mr. T. C. Arnfield of Stockport presented a number of novelties, as bismosal, a combination of a freshly prepared salt of bismuth and salol; laxolates, a synthetic purgative in the form of a palatable chocolate; ear cones; eye-ointment capsules; and tegu-derm, a non-greasy basis which can be washed off with water if required for medicaments for use in skin diseases. Messrs. Wyleys, Limited, of Coventry exhibited a well-designed dispensing cabinet for a branch surgery and their well-known preparations, elixirs of heroin compounds, medicinal syrups, liquors, and, last, but by no means least in merit, their excellent bismuth preparations. The Bayer Co., Limited, of 19, St. Dunstan's-hill, London, E.C., had, as usual, an interesting exhibit. Amongst the novelties may be mentioned "autan," a new self-developing formaldehyde disinfectant. A tablet of this placed in water generates sufficient heat, and hence steam, to result in a copious evolution of formaldehyde gas. The drugs shown included aspirin (aceto-salicylic acid), the now well-recognised valuable substitute for the salicylates; mesotan, an external application for rheumatism; protargol, an organic silver preparation; and theocin-sodium acetate described as a most powerful diuretic and indicated in dropsy both of cardiac and renal origin. Messrs. Reynolds and Branson, of 13, Briggate, Leeds, had an attractive display of fine pharmaceutical products, amongst which may be mentioned a series of elixirs (glycero-phosphates and formates, calcii iodidi, calcii chloridi) and some elegant bismuth preparations. To these should be added "silicasine," a silicate paste containing boric acid, ammonic iodide, thymol, and menthol, an agreeable and effective substitute for the time-honoured poultice. Messrs. C. J. Hewlett and Son, Limited, of 35-42, Charlotte-street, London, E.C., invited the inspection of their improved pharmaceutical preparations. Their pepsine and bismuth mixture is of well-known elegance and has a well-deserved reputation in the successful treatment of certain forms of dyspepsia. Besides this there were an astringent ointment, "hæmorrhaline," which, as its name implies, is used in hæmorrhoids; formaldigen, a formaldehyde tablet for the treatment of septic throat; and a series of antiseptic preparations. Iron in organic form in an easily assimilable state is represented in hæmaboloids, specimens of which were shown by Messrs. Andrus and Andrus, of 46, Holborn Viaduct, London, E.C. The iron is said to be combined with vegetable nucleo-proteids reinforced by peptones, bone-marrow extract, and nuclein. There is also a similar preparation containing arsenic and strychnine. Formolyptol was also shown at this stall and is described as being a combination of formaldehyde with boric acid, glycerine, and certain balsamic constituents. There were several interesting chemical products at the exhibit of Messrs. Zimmer and Co., who were represented by Messrs. Widenmann, Broicher, and Co., 33, Lime-street, London, E.C. Thus there was euquinine, described as tasteless quinine and having the same physiological action as that alkaloid and consisting in reality of ethyl carbonate of quinine. There was also validol, a chemical combination of menthol and valerianic acid, which is said to be a preventive of, and a remedy for, sea-sickness. The value of antiphlogistine as a really effective and scientific cataplasm has been established for many years. Specimens were exhibited by the Denver Chemical Manufacturing Company, London. Lastly, the attention of many visitors was drawn to the merits of "miol" (the Miol Manufacturing Co., Limited, 82, Southwark Bridge-road, London, S.E.) which is compounded of ingredients the administration of which is calculated to restore a healthy state of nutrition, particularly in lasting diseases. It is composed of fine olive oil, active malt extract, the proteins of milk, and small quantities of iodine and phosphorus. Clinical reports are quoted which speak in favour of this preparation in pulmonary tuberculosis, anæmia, and nervous debility.

DONATIONS AND BEQUESTS.—Mr. Henry Webb of Llwynarthan, near Cardiff, has promised 3000 guineas to the governors of Cardiff Infirmary to endow a three-bed ward in the new wing, and Mrs. John Nixon, of Queen Anne's-gate, London, has also promised 10,000 guineas for the endowment of a children's ward.

THE CHILDREN'S COUNTRY HOLIDAYS FUND.—In an appeal on behalf of this fund the Bishop of London points out that "the public elementary schools are now closed and the majority of the children that attend them spend their holidays in the streets, there being no room for them in their crowded homes. The change from the quiet schools to the noise of the streets lays a strain on them that their delicate bodies are ill fitted to bear." On behalf of the children this fund endeavours to send as many of them as possible away for a fortnight to country cottages. Last year 41,970 were sent away. The offices of the fund are 18, Buckingham-street, Strand, London, W.C.

THE LANCET.

LONDON: SATURDAY, AUGUST 8, 1908.

Practical Housing.

THE Chairman of the Birmingham Corporation Housing Committee and of "Harborne Tenants, Limited," Mr. J. S. NETTLEFOLD, whose excellent book on "A Housing Policy" will be in the recollection of many of our readers, has followed it by another on "Practical Housing," which deals in an eminently suggestive and thoughtful manner with one of the chief problems presented by the conditions of modern civilisation. As the family constitutes the foundation of society, so the home, the "house," must be regarded as the foundation of the family; and it is to the condition of the home that we must ultimately refer many of the chief features of the intellectual and physical development of those by whom it is inhabited. Mr. NETTLEFOLD'S experience of the questions with which he deals has mainly, we infer, been derived from urban districts; but these questions are at least equally present, and are perhaps equally pressing, in localities which the passing traveller, noting them from the window of a railway carriage, might regard as the probable seats of unbroken health and of unsullied purity. "What a contrast there is," he might often be disposed to say, "between these charming abodes of rural populations and the miserable slums through which we passed between the railway terminus and the outskirts of the city." If he were able to compare the respective death-rates he would find only too often that the appearance of salubrity was deceptive, and if he could submit to close inspection the localities of such engaging picturesqueness he would be at no loss to understand why the promise at first made to the eye was so seldom fulfilled to the hope. We have before us as we write some 50 or 60 of the reports on the sanitary state and administration of as many rural districts, reports made to the Local Government Board by its medical inspectors, usually as results of inquiries called for by local prevalences of fatal epidemic disease, such as enteric fever or diphtheria, and in these reports we find similar descriptions of the state of cottages repeating themselves with dreary and saddening monotony. Deficiency of cubic space, deficiency of lighting, imperfect ventilation, absence of damp-courses, absence of eave-spouting, saturation of basements, proximity of middens and other nuisances, an insufficient or unwholesome water-supply, and the lack of proper means for the disposal of excrement or refuse are practically universal conditions in the places upon which the inspectors have been called upon to report, and are probably existing in equal intensity in the many others which have escaped condemnation by escaping notice. The underlying cause of these conditions is to be found in the ignorance of communities and in the consequently equal ignorance of the men who are chosen to conduct the affairs of the local administration. They do not understand the costliness in money, as well as in health and life, of the evils which they permit; and they therefore either do not make, or, having made, do not enforce, the by-laws by which some of the most flagrant of these evils might be prevented or removed. Not infrequently they have something like a valid excuse for their inaction in the small size of the area on which the cost of the necessary improvements would be levied and in the inability of poor tenants to pay the rents which alone would render better habitations profitable to the landlords.

In cities and towns, with which Mr. NETTLEFOLD chiefly deals, the conditions to be met with are often of a very different description and have been brought about in many instances by the want of any supervision in the public interest of the proceedings of the individual landowner and of the speculative (not to say "jerry") builder. An increasing demand for industrial dwellings in the vicinity of a town has hitherto been chiefly met by the construction, in the suburb most convenient for the purpose, of numbers of "mean streets," thrown together without foresight of their ultimate relations to one another, or to the main thoroughfares on which they abut, and placed each upon the plot of ground of some single owner, with no regard to the proceedings of others, and with no thought at all for the common wants of the tenants, such as convenience of access to main roads, to markets, to schools, and to places of recreation. Mr. NETTLEFOLD is able to show, by the example of what has been done in Liverpool and in Birmingham, to how great an extent the evils hence arising may be obviated whenever an insanitary urban area falls into the hands of an enlightened municipality for reconstruction, with the result that the old patchwork of courts and houses is superseded by a well-planned building scheme dealing with the surface as a whole. But the main object of his book is to urge a very considerable modification, in relation to town building, of the principle that an owner is at liberty to do what he likes with his own; and the adoption, in lieu thereof, of a system under which new buildings should only be permitted as parts of a general plan, constructed for the greatest convenience of the greatest number, and to which the designs of individual owners, architects, or builders should be rendered subordinate. Steps tending in this direction are in contemplation, or have been taken, in many countries; but the greatest progress has been made in Germany, whence some of the most interesting of Mr. NETTLEFOLD'S plans and sketches are derived. He shows how it would often be possible to take a suburban area that was "ripe" for building, to form a design for its orderly development as a whole, to lay out wide streets for its main thoroughfares and narrower ones (at much saving of expense) in directions leading only to groups of houses, to construct such groups with reference both to immediate and to probable future requirements, and ultimately to render the proceeding more profitable to every owner than it could have been rendered by his own isolated action. He shows, indeed, and without much difficulty, the inevitable superiority of the systematic and the orderly over the irregular and the chaotic.

The President of the Local Government Board has carried through its second reading a Bill for the promotion of town planning on which we have already commented, and there can be little doubt that his knowledge of the existing conditions and requirements of industrial housing, and the eminently practical character of his mind, render him admirably qualified to produce a measure calculated to overcome the first difficulties of the question, and to lead to still further developments as experience of its operation is gradually accumulated. The Bill, we believe, has been described by high authority as calculated to produce headache in those who strive to understand its provisions, but this is only a whimsical way of saying that it calls for close study. There ought to be no serious opposition, either in Parliament or in the country, to a law which would render it impossible for jerry-builders to disfigure the suburbs of great towns with streets of ugly, badly planned, badly built dwellings, destined in the course of a few years to fall into decay, and to be, during the comparatively short periods of their existence, a constant menance to the health alike of their tenants and of their neighbours. With regard to the planning of parts in due subordination to a general scheme, it would perhaps be necessary to lead up to compulsion by degrees, and by measures which, in the first instance, would afford opportunities to pioneers, and would thus in time offer experimental evidence of the increased value which would be given to property by dealing with it as a whole and for the greater comfort and convenience of the community. All this is no doubt possible in towns, and is likely, at no distant time, to be so far realised as greatly to promote the comfort of suburban dwellers of all ranks of life; but in the meanwhile it must not be forgotten that, notwithstanding any actual or possible migration into towns, a large, and it may even be hoped an increasing, proportion of our people must always remain dwellers in the country and that for them the "housing question" is quite as important as it ever can be to the dwellers in towns. The measured language of the medical inspectors of the Local Government Board is far more forcible in its simplicity than any in which the conditions existing in our midst might be described by less cautious and less experienced observers, and it sufficiently discloses the fact that a large proportion of our rural population is lodged in conditions which cannot be otherwise than detrimental alike to health and to morality and which are the frequent causes of serious outbreaks of disease. These evils, as we have said, are in some measure due to the small size of many administrative areas and to the consequently heavy incidence of local taxation. They are in a still greater degree due to the uncertain tenure by which many sanitary offices are held and to the system under which so much of our sanitary legislation has been made permissive instead of imperative. In a time of imperfect knowledge such a system was perhaps inevitable but at the stage which sanitary science has now reached it is inexcusable that urban and rural councils should still be permitted to disregard the advice of their skilled officers, to neglect their duties with impunity, and to suffer the repeated occurrence of preventable disease among the communities which it should be their first endeavour to protect.

The Desirability of Antityphoid Inoculation for Missionaries proceeding to Tropical Climates.

A PAPER of considerable interest by Dr. R. HINGSTON FOX is published in the *Journal of Tropical Medicine and Hygiene* for July. It opens with the statement that whereas the progress of sanitation has resulted in this country and in European nations as well as in most of the British colonies in a greatly diminished mortality from enteric fever, in hot countries the death-rate has been little if at all influenced. In proof of this some statistics relating to India are quoted; thus Major W. S. HARRISON, R.A.M.C.,[1] points out that while the mortality of the troops from cholera in Bengal stations has continuously decreased from 8·86 per 1000 in 1860–69 to 1·25 per 1000 in 1890–99, that from remittent and continued fevers, including enteric fever, has continuously increased from 2·88 to 7·81 per 1000. Although much of this increase may be due to the introduction of the short service system, it is clear that the improved sanitation which has lessened the incidence of the water-borne cholera vibrio has had little or no influence upon that of the typhoid bacillus. A further demonstration of this is afforded by the comparison of the figures for the British army in various parts of the Empire. Thus in the United Kingdom in the year 1906 among 113,532 soldiers the incidence of enteric fever was 0·64 per 1000, with a mortality of 0·09 per 1000; in stations abroad, excluding India, the incidence among 42,561 men was 6·20 per 1000, with a mortality of 0·82; while in India, among 70,913 men, the cases amounted to 15·59 per 1000, with a mortality of 3·19. Dr. HINGSTON FOX points out that the missionary societies suffer heavily by reason of the frequency of enteric fever among the missionaries who are often obliged to live in close touch with the natives. This circumstance together with the arduous nature of the work renders it probable that they are even more subject to the disease than are the troops. He brings forward some figures relating to the experience of one society, the Friends' Foreign Mission Association. Among 63 missionaries working in the Central Provinces of India, 11 are reported to have suffered from enteric fever while working in the mission field; one case proved fatal and in two others the injury to health led eventually to the relinquishment of the work. In Madagascar seven cases can be traced among 53 missionaries, one of which proved fatal.

Dr. HINGSTON FOX gives a brief relation of the history of antityphoid inoculation since its introduction in 1897 by Sir ALMROTH E. WRIGHT, and a simple and lucid account of the theory underlying its employment. He also describes the mode of preparation of the vaccine and its standardisation. The method of inoculation advised is practically that of Sir ALMROTH WRIGHT, the injecting syringe being sterilised by means of olive oil heated to 140° C., a temperature which can be obtained by heating the oil until a crumb of bread placed in it turns brown. The pectoral region or the outer side of the upper arm is recommended for the site of inoculation, which is best made in the evening. After

[1] Journal of the Royal Army Medical Corps, vol. ix., p. 552.

an interval of ten days a second injection is to be administered. The doses usually given are 1,000,000,000 typhoid bacilli (which have been heated to 53° C.) for the first injection and 2,000,000,000 for the second, but Colonel W. B. LEISHMAN, R.A.M.C., has informed Dr. HINGSTON FOX that he now finds that doses of half this strength are sufficient. In the paper before us there are records of three inoculations of missionaries, with observations on the coagulability of the blood in one of them, the results obtained being in accord with Sir ALMROTH WRIGHT's statement that the coagulability of the blood is lessened after inoculation. Some statistical results of the value of inoculation are quoted, which seem to show that the liability to contract the fever is reduced by the inoculation to less than one-third. Dr. HINGSTON FOX strongly urges the importance of the use of this inoculation for missionaries. It is of interest to add that after the discussion of his paper the Association of Medical Officers of Missionary Societies unanimously agreed to the principle and strongly recommended inoculation for missionaries going to India, Persia, North and South Africa, Madagascar, and parts of China.

Is Bovine Tuberculosis due to Human Tuberculosis?

IF Professor KOCH could have foreseen in 1901 the cost in time, money, and work which would result from his somewhat hasty inferences drawn from limited experimental data he might, perhaps, have decided to keep silence or to devote his famous address on the relations between human and bovine tuberculosis to some less sensational theme. Of course, had this been the case the world of science might have been poorer by much of the work which has since been carried out, but, looking retrospectively at it and its results, it is an open question whether, in so far as the control of tuberculous milk is concerned, we should not have been further advanced had attention not been switched off from a fairly obvious danger. Certainly this would have been the case could the money expended have been devoted to scientific experiments directed to ascertaining, for instance, what proportion, if any, of our pulmonary tuberculosis is due to inhalation and what proportion to ingestion, and whether the greater danger of infection, if the human source is the main source, is to be anticipated from infected dust or infected droplets. Nevertheless, the experiments initiated as the result of the Congress in 1901 have materially helped our knowledge as regards ingestion, and it is clear that in certain, or rather uncertain, circumstances the shortest way to the lungs is *viâ* the intestines. There can, too, be little question now that a considerable proportion of our total infantile tuberculosis may be cow-milk borne, and that of those cases which are primarily intestinal in origin a very large percentage may be due to the tuberculous milk of cattle.

But a paper from a Norwegian observer, which will be found in another part of this number of THE LANCET, raises the interesting question as to how far bovine tuberculosis may itself, at least sometimes, be due to human infection. Unfortunately, as Dr. BIRGER OVERLAND, the writer of the paper, fully appreciates, the data which it has been possible to collect lack the precision necessary for trustworthy inferences, but, nevertheless, the contribution raises some interesting issues. Generally stated, the writer's object has been to ascertain how far positive results from the tuberculin tests in milch cattle had their counterpart in the prevalence of tuberculosis amongst the workpeople on the farms in question. The writer accepts for granted the view that the tuberculin test in cattle is, and has been for some years, thoroughly trustworthy as an indication of the presence or absence of bovine tuberculosis, and in the absence of the tuberculin test amongst the workpeople he has had to rely upon such other data as he was able to procure by correspondence, cross-examination, and by physical examination. Here probably the data in relation to the actual number of cases of tuberculosis are very untrustworthy, inasmuch as, judging by post-mortem statistics, the majority of cases of tuberculosis pass unrecognised during life. Then, again, the question arises as to what proportion of cows which yield a positive reaction to the tuberculin test are actually yielding tubercle bacilli *viâ* their milk. About this we know very little, although some recent American work suggests that quite healthy-looking cattle may be passing abundant tubercle bacilli by their excreta and perhaps, too, by vaginal secretions, in either of which cases the specific external fouling of the cow's udder is not an improbable event.

For the details of the investigation to which we refer the paper itself must be consulted, because it is by this means alone that the obvious lacunæ in the whole argument can be properly appreciated. Dr. OVERLAND'S purely provisional conclusions, the untrustworthiness of which he fully sets out in his paper, are that tuberculosis in man and in cattle have a certain relation to each other in that the number of cattle reacting on farms where human tuberculosis has been recognised are nearly three times greater than on farms where the disease in the workpeople was not recognised. Setting aside the obvious fallacies which are likely to be involved in a conclusion such as this, it is clear that, accepting for the moment the data themselves as trustworthy, such a condition might be due to the cattle infecting the workpeople or the reverse. Dr. OVERLAND evidently inclines to the view that cattle are more frequently infected by man than the reverse, and he asks, "Has not man originally infected the cattle, and afterwards the latter made return by sometimes infecting man?" In so far as one portion of his district is concerned he thinks that the tuberculosis came to the district with the workpeople rather than with the cattle. We seem to require, as Dr. OVERLAND clearly recognises, more information as regards the *type* of the bacilli which obtained in the cattle and in the persons affected, but notwithstanding this and numerous other possible fallacies the communication raises points to which, we trust, the Royal Commission on Tuberculosis will soon turn its attention. At the present time we are expecting to hear from the Commissioners what *amount* of human tuberculosis is due to bovine origin, and we sincerely trust that they will not finally close their books before they have told us. We shall like to hear, too, whether in Greenland there is much tuberculosis but no cattle to convey the disease

to man, and what are the facts as regards Japan. In both these directions we might obtain some illuminating information.

Annotations.

"Ne quid nimis."

THE REVISED CURRICULUM FOR THE DEGREE IN MEDICINE AT THE UNIVERSITY OF LONDON.

THE Senate of the University of London has recently come to a decision regarding the curriculum for the medical degree which may have a far-reaching influence. The curriculum is to be extended by six months, and of the five and a half years which the London student will be obliged to spend in his training two and a half will be devoted to the preliminary studies and three to the clinical studies. The multiplication and growth of the subjects taught in both "school" and "hospital" have been so rapid during the last 20 years that some increase in the statutory period allotted for mastering them was perhaps bound to come about, but the increase is more apparent than real, for it is well known that the average time taken by British students to obtain a medical qualification is over six years under the existing *régime*. The readjustment of the time to be devoted to preliminary and professional studies, which will alter the old ratio of 3 years to 2 in favour of the former to a ratio of 3 years to 2½ in favour of the latter, forms an advance upon lines that we have long advocated, but the decision of the Senate at this juncture may be of vital importance to the future of London students. At a meeting of the Council of the Royal College of Surgeons of England on June 18th a committee was appointed to consult with any similar committee that might be appointed by the Royal College of Physicians of London with the object of considering and drafting a scheme to establish a system of conjoint examination between the Colleges and the University of London which might be laid before the Senate of the University. In our present issue we report the proceedings of the last Comitia of the Royal College of Physicians of London at which it was resolved that such a joint committee should be formed between the Colleges and that a *rapprochement* should be sought with the University of London with the object of establishing a system of conjoint examinations. It is natural that a system of conjoint examinations should follow upon identical curriculums, so that changes in the medical curriculum exacted of their students by the University of London might have to be adopted by the Colleges, and a situation of some difficulty may thus have been created. The new regulations at the University of London will not, we understand, come into force for a year.

CORN OIL IN THE TREATMENT OF TUBERCULOSIS.

IN the *Journal of the American Medical Association* of July 4th Dr. John Ritter, Instructor in Medicine, Rush Medical College, Chicago, has called attention to the value of a cheap form of fat—corn oil—in the treatment of tuberculosis. When the tuberculous patient cannot take sufficient fat in his ordinary food recourse must be had to some fat in the form of a medicine. The vogue of cod liver oil for this purpose is well known. Of late olive oil has been much used in America. But both these oils are expensive and tuberculous patients are usually poor. This induced Dr. Ritter to look for an oil which was cheap, palatable, easily assimilable, and well borne by the stomach. His attention was directed to an oil obtained from corn or maize. Corn or maize oil is contained in corn to the extent of from 3·5 to 6 per cent. It is found entirely in the germ, of which it forms about 50 per cent. It possesses all the properties of the fixed oils. It is of light straw colour and has a peculiar corn flavour. Its composition, like that of all vegetable fixed oils, is complex; it consists mostly of glycerides of the fatty acids, stearic, palmitic, oleic, and so forth. It is chiefly obtained as a by-product in the manufacture of starch, dextrine, and glucose. Hence its cheapness, its price being about one-fourth of that of any other oil or fat usually prescribed in tuberculosis. Its low price, wholesomeness, and palatableness make it an ideal oil in tuberculosis. The Central Free Dispensary, Chicago, and the Tuberculosis Institute, Chicago, have used it with gratifying results in all cases.

DIABETIC GANGRENE CURED BY THE APPLICATION OF AIR AT A HIGH TEMPERATURE AND PRESSURE.

AT a meeting of the Société Médicale des Hôpitaux of Paris on April 3rd M. René Bonamy, M. Marat, and M. Vignat called attention to a new method of treatment of diabetic gangrene—the application of air at a high temperature and pressure. They used an apparatus invented by M. Prat which consists of a source of compressed air and of a generator of heat formed by pieces of platinum, which are made incandescent by a current of carburetted air. By an ingenious device the intensity of the heat and the pressure of the air can be varied as desired by the operator. This method of using hot air differs from all previous ones, for a pressure exceeding 15 kilogrammes and temperatures exceeding 600° C. can be attained, which not only produce active congestion but sterilisation, destruction, and even removal of the diseased tissue. The apparatus of M. Prat was first used on animals in the veterinary school of Lyons in 1889. It is capable of being put to many therapeutic uses but in the present communication only the effects produced in diabetic gangrene are considered. The gangrenous part is cauterised and deeply roasted by a current of air at a temperature exceeding 300° C. Further, with a current of air at a temperature of 150° to 200° C. active congestion and slight burns of the living tissues are produced. Sometimes the application is very painful and necessitates administration of chloroform but usually the patient feels little. Often there is such thermo-anæsthesia that no pain is felt after large burns of the second degree. Moist dressings of hot sterilised water, frequently renewed, immediately relieve any pain produced. The hot air has several actions on the tissues; it sterilises, dries up raw surfaces, and deodorises them. An interesting fact is that the scars which follow the burns produced are perfectly supple and flat, like those produced by radium. The following is an example. A diabetic subject, aged 65 years, was admitted into hospital on Jan. 17th, 1908, suffering from moist gangrene of the fourth toe of the left foot following an injury. On Jan. 23rd, without anæsthesia, the toe, which was totally gangrenous, was removed. In the evening the temperature rose to 100·7° F. and it remained elevated on the following days. There were cough, moist râles, and dulness at both bases. The general condition became bad and there was slight delirium. On Jan. 27th the foot was swollen to double its normal size, fœtid, and of a reddish-violet colour. The skin of the whole sole was raised into an enormous brown bulla which on incision yielded a turbid fluid with putrid odour and fœtid gases. In the position of the gangrenous area there was emphysematous crepitation. A diffuse infiltration extended between the fourth and fifth metatarsal bones on the back of the foot and

reached the leg which was covered with black vesicles. The urine of the 24 hours contained two and a half grammes of albumin, 166 grammes of glucose, and a trace of acetone. The patient was in a desperate condition and on the verge of coma. A current of hot air was directed on all the gangrenous part and the tissues dried up, contracted, and became black. The patient did not appear to feel pain as long as the heat was applied to the diseased parts but he reacted when it affected the sound tissues. A moist, very hot dressing was applied. On Jan. 28th the odour from the dressing was very strong and there was considerable oozing but the gangrene had not spread farther. On the 29th the gangrenous part was hollowed out and the plantar fascia was visible. The vesicles on the sound skin were flattened and were red at the centre and surrounded by a white areola. On the 30th it was evident that the gangrene had been arrested. The hot air was applied not only to the foot but also to the leg and sound tissues. On the 31st some of the burnt tissue was removed with scissors. The sole was hollowed out for a depth of two or three centimetres, as if with a punch. The skin, subcutaneous tissue, plantar fascia, and almost all the superficial flexors had disappeared. The border of this area was surrounded by vigorous living tissue; the adjacent skin, except for the burns, looked normal. On Feb. 1st the odour had almost disappeared. On the 11th there were granulations in the centre of the destroyed area and the head of the fourth metatarsal bone was laid bare. On the 16th the latter was removed with scissors. Under an anti-diabetic diet recovery was completed.

THE COST OF THE MEDICAL INSPECTION OF SCHOOL CHILDREN IN NORTHUMBERLAND AND DURHAM.

IN the county of Northumberland two whole-time qualified medical inspectors, a man and a woman, have been appointed at a salary of £250 per annum plus travelling expenses for the purpose of the medical inspection of the scholars in the Northumberland elementary schools. Arrangements are to be made, if possible, with the Northumberland County Nursing Association for the inspectors to be assisted by the local nurses, and in cases where the services of a nurse will not be available arrangements are to be made for the attendance of a teacher's wife or other suitable person. It is estimated that during the first year the number of children to be examined—that is, the number admitted to and leaving the public elementary schools in the county—will be 11,500. The sum of £1500 is included in the estimates for the year ending March 31st, 1909, but the work has not yet been begun, so that figures are not available which would allow of a calculation being made of the amount of time to be given to the examination of each child or of the cost per head. It is quite clear, however, that £1500 will represent but a very small part of the expense which will have to be borne by the county in two or three years' time in connexion with medical inspection. The expense ahead of the county has led to some anxiety. The Duke of Northumberland has said that up to a few years ago if a Government embarked on any legislation which would involve any expense, that expense was expected to be borne by the Imperial Exchequer. There was now he considered a policy of an entirely different spirit. Parliament was passing Acts that did not cost the taxpayer one penny but fell entirely on the rates. He added that he only saw one remedy for this sort of thing, and that was that the county councils of England should stand out against it. If they did stand out firmly they were bound to succeed, for they were absolutely within their rights. The Durham county council has appointed three whole-time qualified men at a salary of £300 per annum, together with travelling and other expenses; and also three lady health visitors at a salary of £120 per annum, rising to £150 per annum, together with travelling and other expenses. It is estimated that 30,000 children will have to be inspected during the first year and that the ultimate cost will be equal to a rate of nearly 2¼*d.* in the £, that is about £40,000 per annum, a 1*d.* rate producing £16,184. The county rate in Durham is increased by 3¼*d.* for the coming year, the increase being entirely due to elementary education, and it is impossible for those in charge of county finance not to wince at the prospect ahead. But medical men, on the other hand, must feel that the investment of money in the improvement of the national physique must bring, and probably bring quickly, a splendid return.

THE HEALTH OF MR. CHAMBERLAIN.

THERE is a tone of disappointment in many recent newspaper paragraphs on the health of Mr. Chamberlain which is scarcely justified so far as we can learn. He is still, it is true, unequal to the great part in public affairs which he played before his illness, but we gather that in the opinion of his responsible medical advisers his condition is greatly improved. They find evident progress at every point. His mind is as alert as ever. He is delighted to be in Birmingham again and "to dwell among his own people." He enjoys conversation with friends and takes a keen interest in political affairs. He is recovering quickly from the journey to Aix. He walks better and gets out more. In these circumstances it is surely wise to hasten slowly, and we hope that Mr. Chamberlain will be encouraged by his friends to use carefully his convalescence by attempting only such services as will gently and safely excite his interest and even promote his recovery. To attempt more would be to retard his progress and to make his effective intervention in public affairs more impossible.

BILATERAL DISLOCATION OF THE SHOULDER.

SIMULTANEOUS dislocation of the humerus on both sides is a very rare occurrence, and Dr. Jean Anglada of Montpellier has recently collected in the June number of the *Archives Générales de Chirurgie* all the cases which he was able to find in surgical literature. His own case was that of a woman, 55 years old, who was admitted into the Montpellier Hospital under the care of Professor Forgues. On the previous evening she had fallen downstairs and she had been unable to use her arms since. In the act of falling she had thrust forwards her hands to protect her face, and as the staircase made a sudden bend at that spot her hands were forced violently against the wall. Her great stoutness had rendered the impact more severe. On examination it was found that on both sides there was a subcoracoid dislocation of the humerus and reduction was readily effected under anæsthesia and complete recovery followed. As to the method of production Dr. Anglada considers that any one of three factors may be responsible for this double lesion—a violent muscular contraction, a fall or a blow, simultaneously or successively on the two shoulders, or a fall on the hands or elbows. It is recognised that sudden or violent movements may displace the humerus in one shoulder, and several cases have been recorded when such movements have given rise to double dislocation of the shoulder. Thus Holmes has recorded a case where a man who was being chased raised his arms suddenly to seize a fence and dislocated both shoulders. Bollinghoel had a case in which the same result followed an epileptic fit, and Lister had a similar case. In Nathan Smith's case the double lesion occurred during an attack of eclampsia. Several examples have been recorded of the condition following blows on both

shoulders. Sullivan records a case where a sailor fell into the sea and as he was swimming he was struck by the paddle first on one shoulder and then on the other, and a double dislocation resulted. In Stanley Yeoman's case part of the roof of a coal-mine fell on a man's back and caused double subcoracoid dislocation. In nearly all the recorded cases, however, the blow has come on the hands or elbows, and a fall is the most usual way in which the blow has been delivered. In Davidson's case a carpenter fell from a roof and both his elbows touched the ground at once, in Hamilton's the patient fell from a carriage, and in Lister's he fell from a tree. In Hennequin's case the fall was backwards. In Gant's case one side was first dislocated and then the other: an omnibus was upset and the patient was thrown off; he fell on the right shoulder and felt that it was dislocated; the next moment another passenger fell on his left shoulder and he felt that that was dislocated also. In some of the cases there has been a history of earlier displacements of the joints. In most of the instances the same variety of dislocation existed on the two sides, and the subcoracoid is the most common.

THE EXPERIMENTAL PROPHYLAXIS OF SYPHILIS.[1]

WE noticed recently a valuable book on syphilis written by officers of the Royal Army Medical Corps; now we have before us a book on "The Experimental Prophylaxis of Syphilis," written by a Frenchman and translated by a surgeon in the navy, who is to be congratulated on the readable English into which he has turned his author's interesting chapters. Briefly, the argument is that the virus of syphilis cannot penetrate unbroken skin, that it must have an abrasion through which to reach its special field of attack in the upper layers of the dermis. But syphilitic lesions have treponemata swarming in their deeper layers and few on the surface; hence a syphilitic lesion rarely infects another person unless its own surface has been firmly rubbed off and its deeper and more infectious area exposed—a fact which is indicated by the comparative rarity of extra-genital chancre. The disease swiftly becomes generalised, consequently excision of the chancre does not prevent infection, although in certain situations the practice is very good, as the wound heals by first intention and the patient is saved some risk of added infections and possibly much inconvenience. How far is it possible that mercury applied to the area of infection, before or very soon after infection had occurred, might destroy the virus? It has now been proved by logical treatment. Metchnikoff and Roux have inoculated apes, and so successfully that they can state that their inoculations will always be followed by chancres unless the inoculated area is rubbed within an hour or so after inoculation with a 30 per cent. calomel ointment for five minutes, and this not merely because of the mechanical removal of the poison by rubbing, as protection is not secured if the proportion of calomel in the ointment be less than 30 per cent. Dr. Maisonneuve's book is written to show how, guided by this experimental and other clinical evidence, the 30 per cent. calomel ointment in lanolin can be recommended as a certain prophylactic if used before or within an hour or two after exposure to infection. It is stated that this ointment is issued to all men in the French army. An ointment is issued to the German army with similar intention. So far as we can learn we are content to act in Great Britain as if the evils of syphilis do not exist and we call attention to the work for this reason.

[1] By Dr. Paul Maisonneuve. Translated by P. L. de Verteuil, M.B. Edin., M.R.C.S. Eng., L.R.C.P. Lond., Surgeon, R.N. Bristol: John Wright and Co.; London: Simpkin, Marshall, and Co. Price 4s.

EAST SUSSEX SCHOOL INSPECTION SCHEME.

THE East Sussex education committee and county council combined have changed their plans as regards the medical inspection of school children. Instead of appointing a male superintending medical officer at a salary of £400 per annum with an allowance of £40 per annum for travelling expenses, and a male assistant medical officer at a salary of £250 per annum with a like allowance for travelling expenses, as was agreed upon in April last, the authorities have decided that the inspection shall be carried out under the supervision of the county medical officer of health, thus per annum:—

County medical officer	£150
Travelling expenses	20
Two whole-time inspectors (each £250)	500
Travelling expenses (each £40)	80
Inspector of midwives	25
Travelling expenses	10
	£785

Since the April meeting of the county council a conference has been held attended by the education committee and the public health committee of the county council, and it was at this conference that the new scheme was agreed upon, the education committee and the county council ratifying it on July 28th. The cost is a little more than the original scheme, but, as will be seen, it provides for two whole-time inspectors and for making use of the county medical officer and the inspector of midwives. The time of the latter has not hitherto been fully occupied. A proposal for appointing a whole-time county medical officer of health, having regard to the extra work now entailed, is a matter for further consideration. The new scheme divides the East Sussex area into two divisions. The number of scholars (about 26,000) and schools (176) will remain the same, so it may be taken that the appliances required will be as tabulated in these columns in April last.[1] With such a comprehensive scheme as this appears it is very evident that the East Sussex authorities fully realise that the medical inspection of school children is the foundation-stone upon which all the means for the healthy environment and better physical development of the rising generation must rest.

WITHERING SARCOMA OF THE SCALP.

IN the *New Zealand Medical Journal* for May Dr. P. C. Fenwick has published a case of a curious tumour of the scalp. The patient was a healthy-looking man, aged 38 years, with an excellent family history and no history of tuberculosis or venereal disease. He stated that two years previously a small dark spot appeared on his chest and slowly grew to the size of a watch-glass. It was firm and slightly elevated and painless. In the course of a few months it slowly disappeared. Simultaneously with its disappearance a spot appeared on the right parietal region (the patient was bald) and this slowly grew. He came under observation 11 months after the growth on the scalp began. The right parietal region showed a curious-looking tumour measuring 4 by 3½ inches and elevated three-quarters of an inch above the scalp. Its colour varied from pink to dark red. It was nodular, very firm and elastic, and painless, and not moveable over the bone. At every point of the circumference small vessels passed into the growth The patient was shown to a local medical society and the only diagnosis that could be suggested was a myxo-fibroma. The x rays were applied daily for five days, then three times at intervals of three days, and finally weekly. After the first application the tumour began to shrink rapidly, and after the last application only a slightly stained area marked its position. A wax cast and a photograph of the

[1] THE LANCET, April 18th, p. 1164.

growth were sent to Mr. S. G. Shattock, pathological curator of the Royal College of Surgeons of England, who reported that the growth closely resembled one observed by the late Mr. Morant Baker at St. Bartholomew's Hospital and termed by him "withering sarcoma," of which there are models in the museum (numbered 313, 314 in the dermatological collection). This tumour grew on the scalp, was unconnected with the bone, and was classed as a fibro-sarcoma. According to Mr. Shattock such tumours are all markedly vascular, contrasting with the scalp; they rise in a node-like form and some of them spontaneously diminish.

PHYSIOLOGICAL STANDARDISATION OF DRUGS.

IN the *American Journal of Pharmacy* for July Dr. A. C. Crawford, of the United States Department of Agriculture, contributes an extensive and interesting *résumé* of the present state of our knowledge of the standardisation of drugs by physiological or biological means. As yet there is no method available for quantitatively testing yohimbin, curare, abrin, ricin, jequirity, and the saponins, but most of the widely used drugs can be standardised by chemical or biological methods. According to Kobert, a chemical assay is unsuited for the determination of aconitine and for small quantities of picrotoxin and certain other drugs. In such cases a biological method is desirable, as well as in the case of certain other potent drugs where it is preferable to control the results obtained by chemical means. The assay of the active principle of the suprarenal glands consists in determining the minimum quantity that will cause a rise in the systemic blood pressure of a narcotised dog with both vagi cut. An alternative method has been suggested by Cameron depending on the fact that nitro-glycerin will quantitatively neutralise the action of suprarenin on the blood pressure. It is difficult to standardise the pituitary glands because after a few injections of pituitary extracts the circulatory organs acquire a certain immunity and fail to respond by a rise in blood pressure. In the case of ergot Dr. Crawford prefers a method of standardisation based on its action on the uterus of some of the lower animals. Such a method has been worked out by Kehrer[1] who used the isolated uterus from cats. He found that ergot became seven or eight times weaker after being kept for one year, while aqueous extracts of ergot began to lose their activity in a few hours. Up to the present time no better method of standardising cannabis indica has been devised than by noting the minimum quantity necessary to produce incoördination in movements in dogs or cats. It has been shown that digitalis leaves lose much of their activity when kept in the usual way, thus accounting for the wide variations that have been observed in the galenical preparations of the drug. According to Loewy[2] preparations of digitalis are injured by the normal acidity of the stomach. He pointed out that an infusion of the drug loses one-half of its strength in 24 hours, a loss which may be prevented for several days by the addition of sodium bicarbonate. The numerous principles that have been isolated from digitalis vary in activity and require standardisation even more than the leaves. While at one time it was thought that digitalin was the active principle the idea is gaining ground that digitoxin is the constituent on which the action of the drug depends. Dr. Crawford, however, holds the opinion that digitalis leaves do not owe their medicinal value to any one of the principles which have been isolated. Digitalis and its preparations are usually standardised by determining their toxicity on frogs. Another method consists in determining the quantity required to cause systolic stoppage of the ventricle within from 20 to 60 or more minutes. The latter method has the advantage of being based on the characteristic action of the drug, but the exact time at which systolic stoppage occurs is sometimes difficult to determine. It is important to note that frogs vary in their response to drugs according to sex, temperature, and the amount of inorganic salts present in the injections. Thus digitalis arrests the frog's heart in systole, while digitonin causes diastolic stoppage of the heart, and small doses of digitoxin cause the heart to stop in systole, whereas large doses do not. Again, if the frogs are immersed in normal salt solution digitalin causes diastolic stoppage. But the mere determination of the toxicity of these preparations is misleading because the known active principles readily decompose into digitoxiresin, toxiresin, and so on, which are very poisonous bodies, and so raise the toxicity without necessarily contributing to the medicinal action. Dr. Crawford suggests that care should be taken to use the right species of digitalis, and then determine the toxicity of its preparations on guinea-pigs and their action on the mammalian heart. These tests may be supplemented by making use of the physiological antagonism between digitalis and the nitrites. The standard leaves should be carefully dried *in vacuo* and preserved in air-tight vessels. It has been shown that the action of digitalin is markedly weakened as a result of gastric digestion, so that a failure of preparations of digitalis to act clinically is not necessarily attributable to deficient strength. In the case of many purgative drugs a physiological test, though not completely satisfactory, is better than a chemical one. The emetic drugs can be assayed chemically or they may be tested physiologically, but it is important that uniform methods and standards should be adopted, so that uniformity of activity may be attained.

[1] Archiv für Experimentelle Pathologie, vol. lviii., p. 366, 1908.
[2] Wiener Klinische Wochenschrift, vol. xix., p. 1157, 1906.

Mr. George Allardice MacDonald, M.B., C.M. Edin., has received the King's permission to accept and to wear the insignia of the third class of the Order of El Aliyeh, which has been conferred upon him by His Highness the Sultan of Zanzibar in recognition of valuable services rendered by him.

THE library and rooms of the Royal Society of Medicine will be closed during August for cleaning and alterations.

OCCUPATIONAL MORTALITY.

AMONG the various Government publications dealing with the public health in one or other of its aspects there are, in our judgment, none that possess greater interest for our profession than do the statistical reports issued periodically from the General Register Office, and among these none will better repay perusal than the volume which now lies before us and which treats of the mortality incidental to the chief industries of the English people.[1] This volume constitutes the second and concluding part of Dr. Tatham's Decennial Supplement to the Sixty-fifth Annual Report of the Registrar-General, the first part of which, dealing with general mortality in England and Wales, was published last year and was reviewed in successive issues of THE LANCET. According to custom the report takes the form of a letter to the Registrar-General, who contributes a preliminary address presenting the volume to the President of the Local Government Board, and through him to Parliament.

The present report appears to compare very favourably with its several predecessors. It is replete with valuable information on occupational mortality and will doubtless be utilised by the various State departments that in various ways are responsible for the care of the public

[1] Letter to the Registrar-General on the Mortality in Certain Occupations in the Three Years, 1900, 1901, 1902, by John Tatham, M.A., M.D., Fellow of the Royal College of Physicians. Supplement to the Sixty-fifth Report of the Registrar-General. Darling and Son. 1908.

health, as well as by medical officers of health, who specially need such information for comparative purposes. The general plan of the report is similar to that adopted by the author 10 years ago, except that the Healthy Districts Life Table, which on that occasion was published with Part II. of the Decennial Supplement, now finds a place in Part I., which has already been presented to Parliament.

In the present volume Dr. Tatham has set himself the task of determining as nearly as possible the share of the recent general improvement in the state of the public health which has fallen to the lot of the workers in each of the principal industries. For that purpose he has very considerably abridged the rather voluminous list of occupations adopted at the recent census—well-defined industries giving employment to large numbers of workers being dealt with separately, whilst in exceptional cases several of the smaller industries of like character have been grouped together under the same heading.

In the Supplements corresponding to the censuses of 1881 and 1891 the mortality statistics related exclusively to those who at the time of enumeration were found actually following a definite employment. But in 1901, for the first time, the census reports supplied additional information respecting "the retired," and thus furnished the means for an important extension of inquiry into the subject of occupational mortality—an advantage which has been turned to good account. The term "retired," as there used, applies not only to those who by reason of good fortune have retired from business, but also to those who from permanent breakdown of health, perhaps caused by stress of employment, have been deprived of the ability to earn a living. It is therefore obvious that statistics based on the deaths of the occupied alone cannot be accepted as an accurate measure of the loss of life in a given industry. For this reason, in the present report the mortality statistics of the retired have been included with those of the occupied. The tables in this report are arranged in two series—in the first they relate to the occupied exclusively, and are therefore comparable with the tables previously published; in the second the tables relate to both classes of the population, and these, although indicating approximately the mortality incidental to the various employments, are not strictly comparable with the tables in past reports.

The table respecting each occupation contains two sections, one for the occupied alone, the other for the occupied and the retired. From the years of life and the recorded deaths in the triennium 1900–02 the mean annual death-rates per 1000 living have been calculated for the seven groups of ages, and these rates afford the means of comparing the mortality of one occupation with that of another. But, in order to facilitate comparison with the data for previous years, attention is mainly directed to a term of life corresponding to man's most effective working power—namely, the interval between the twenty-fifth and the sixty-fifth year. The reasons for selecting this interval as "the main working part of life" are fully set forth in this report. At ages before 25 the effects of occupation will scarcely have had time to become fully developed, whilst, as regards the ages beyond the sixty-fifth year it is contended that this is the period which is more especially affected by the retirement of those who have become too weakly to follow their accustomed vocations. Dr. Tatham draws attention to the fact that young men, before settling down to the business of life, very commonly shift from one occupation to another. Possessing generally a high degree of vitality, these young men would probably be capable of resisting for a time the unhealthy conditions of an employment—which condition, on this account, might remain undetected. On the other hand, as the higher ages are reached, the effects of retirement, whether from physical incapacity or from other causes, become pronounced more and more strongly. Moreover, at ages beyond the sixty-fifth year it is impossible to eliminate the disturbing influence of varying age constitution among the living, and it is certain that this influence is greater towards the end of life than at any other stage, owing to the rapidity with which the death-rate increases at the more advanced ages. It is obvious that the selection of any term of life cannot be otherwise than arbitrary, it being impossible to fix upon any single term of years that shall represent with equal precision for every occupation the period of man's greatest capacity for work. In order, however, that the statistics of the several occupations should be fairly comparable it is essential that the same age period should be retained throughout. For these and other reasons specified in the report the interval between the twenty-fifth and the sixty-fifth year has been adhered to as "the main working period." For this period a "comparative mortality figure" has been prepared for each occupation, of which the distinguishing feature is that it is practically independent of varying age constitution of population, and depends exclusively upon the rates of mortality at the several age groups. Dr. Tatham draws special attention to the fact that the comparative mortality figures for 1890–92 and earlier periods as given in this report differ from those previously published. The reason for this discrepancy is explained to be that in each of the earlier reports the standard population adopted was the numbers of the living that gave 1000 deaths according to the rate of mortality prevailing at the time. At each succeeding period it has been necessary to re-calculate the earlier figures, so as to allow for changes of mortality and changes of age constitution among the living, between the different periods. With every change of standard population revision is required in order to retain comparability for the figures in the several periods. The question has been carefully considered as to whether the standard population should be derived from the records of 1890–92 or from those of 1900–02. The adoption of the standard first mentioned would have left unchanged the figures already published and would have shown the recent figures as less by about one-ninth part than those which appear in the present report. After careful consideration, however, it has been decided to adopt the recent standard and to re-calculate the mortality figures for 1890–92 on this basis.

From a table in the report it appears that in the course of the three-year period 1900–02 there were registered the deaths of 284,009 men between the ages of 25 and 65 years, and that these deaths occurred in the course of 20,166,153 years of life—a number equal to thrice the population enumerated at these ages at the last census. Amongst the male population generally within these age limits there occurred 1000 annual deaths in each 71,005 living; and if this last number be divided proportionally to the numbers enumerated at the last census it will be found that 26,259 of them were living at the age 25–35 years, 20,407 at the age 35–45 years, 14,743 at the age 45–55 years, and 9591 at the age 55–65 years. This number (71,005) is the present "standard population," which, subject to the rates of mortality obtaining at the several age-groups among males generally, produced 1000 deaths in a single year. The comparative mortality figure is obtained by multiplying the four constituent numbers above specified by the death-rates recorded at the corresponding age-groups in each occupation; the sum of the products gives the number of deaths that would occur in the standard population supposing it to have experienced the death-rates at the several ages which prevailed in that occupation. In the decennium intervening between the last two censuses there was a marked decline in general mortality throughout the main working period, the rates having fallen by proportions varying from 11 per cent. at ages 55–65 years to no less than 17 per cent. at ages 25–35 years. So great were the changes of mortality that whereas in 1890–92 there had occurred 1000 deaths in every 61,215 males living between 25 and 65 years of age, in 1900–02 the same number of deaths occurred among 71,005 males then living; so that, ignoring changes of age constitution, the population that gave 1000 deaths in the more recent period would have given 1160 deaths had it been subject to the rates that prevailed in the earlier.

(To be continued.)

ROYAL COLLEGE OF PHYSICIANS OF LONDON.

AN ordinary Comitia was held on July 30th, Sir RICHARD DOUGLAS POWELL, Bart., K.C.V.O., the President, being in the chair.

The PRESIDENT announced the award of the Bissett Hawkins gold medal to Sir Shirley Murphy, medical officer of health of the County of London, for his distinguished services in the cause of public health.

The dates of the November lectures were given as follows: The Bradshaw lecture, by Dr. William Pasteur, on Nov. 3rd; the FitzPatrick lectures, by Dr. Leonard G. Guthrie, on

Nov. 5th and 10th; and the Horace Dobell lecture, by Mr. Leonard S. Dudgeon, on Nov. 12th. The President further announced that he had invited Dr. F. W. Pavy to deliver three lectures on the results of his latest researches on diabetes from the point of view of clinical medicine and that they would be delivered on Nov. 17th, 19th, and 24th.

On the motion of Dr. DE HAVILLAND HALL, seconded by Dr. H. H. TOOTH, it was resolved that a vote of thanks be conveyed to those Fellows who had served on committees in connexion with the conversazione recently held at the College and to those gentlemen who had lent pictures and objects of art to exhibit on that occasion.

The following gentlemen having passed the required examination were admitted as Members of the College:—George Bidie, M.B. Edin.; Stanley William Randolph Colyer, M.B. Lond., L.R.C.P.; Stanley Dodd, M.A., M.B. Camb., L.R.C.P.; John Foster Gaskell, M.A., M.B. Camb.; Kenneth Harrison Alloa Kellie, M.A., M.B. Camb., L.R.C.P.; Charles Paget Lapage, M.D. Vict.; Alfred Goodman Levy, M.D. Lond., L.R.C.P.; John Charles Francis Naumann, L.R.C.P.; Alfred Parkin, M.D. Durh., L.R.C.P.; Albert Ramsbottom, M.D. Vict.; and John Clark Wilson, M.D. Edin.

Licences to practise physic were granted to 99 gentlemen who had conformed to the by-laws and regulations and had passed the required examinations.

Diplomas in Public Health were granted jointly with the Royal College of Surgeons to the following gentlemen: Clifford Beards, M.B., B.Ch. Oxon., L.R.C.P., M.R.C.S.; Henry Martyn Brown (Captain, I.M.S.), M.B. Lond.; Thomas Evans Francis, M.D., B.S. Lond.; Alexander Gibb Glass, M.B., Ch.B. Edin.; Stephen Roodhouse Gloyne, M.B., Ch.B. Leeds; John Hague, L.R.C.P., M.R.C.S.; Austin Joseph Moran, L.R.C.P. & S.I.; James Jenkins Paterson, M.B., B.S. Lond., L.R.C.P., M.R.C.S.; Richard Hugh Penton (Lieutenant-Colonel, R.A.M.C., D.S.O.), L.R.C.P., M.R.C.S.; Arthur Hunt Safford (Captain, R.A.M.C.), L.S.A.; Dudley Sheridan Skelton (Captain R.A.M.C.), L.R.C.P., M.R.C.S.; William Percy Walker, L.R.C.P., M.R.C.S.; Ellacott Leamon Ward (Captain, I.M.S.), L.R.C.P., M.R.C.S.; and Stanley Herbert Warren, L.R.C.P., M.R.C.S.

The following communications were received:—1. From the Rev. J. de Burgh Forbes, offering the College, on behalf of his mother, an oil painting of Sir James Clark, Bart., C.B., a Member of the College, physician to Her Majesty Queen Victoria. The treasurer, Sir Dyce Duckworth moved, and Dr. D. Ferrier seconded, that the painting be accepted and the thanks of the College conveyed to Lady Forbes. 2. From the secretary of the Institution of Electrical Engineers to Mr. Hallett, reporting the completion of their purchase of the Examination Hall buildings and ground lease. This was received and ordered to be entered on the minutes. 3. From the secretary of the Royal College of Surgeons, reporting proceedings of their council on May 14th, June 18th, and July 9th. 4. From the registrar of the General Medical Council, inclosing an interim report of the education committee, dated May last, on proposals respecting the medical curriculum. This was referred to the committee of management for examination and report. 5. From The delegates of the University Museum, Oxford, inviting the College to send a representative to the celebration of its fiftieth anniversary, Thursday, Oct. 8th. The President nominated Sir William S. Church, Bart., K.C.B., to represent the College. 6. From the National League for Physical Education and Improvement, inviting the College to appoint a representative on their working committee. Dr. H. H. Tooth was appointed representative of the College on the motion of Dr. Ferrier, seconded by Dr. J. Mitchell Bruce. 7. From the British Executive Committee of the International Congress on Tuberculosis to be held at Washington, Sept. 21st to Oct. 12th, inviting the College to send a delegate. The President nominated Dr. C. Theodore Williams as the delegate of the College.

The following Censors, other College officers, and examiners were elected on the nomination of the President, the Council, and the library committee:—Censors: Dr. Norman Moore, Dr. Francis de Havilland Hall, Dr. Seymour John Sharkey, and Dr. James Kingston Fowler. Treasurer: Sir Dyce Duckworth. Emeritus registrar: Sir Henry Alfred Pitman. Registrar: Dr. Edward Liveing. Harveian librarian: Dr. Joseph Frank Payne. Assistant registrar: Dr. Joseph Arderne Ormerod. Elected members of the library committee: Dr. William Osler, Dr. Humphry Davy Rolleston, Dr. Arthur Francis Voelcker, and Dr. Charles Arthur Mercier. Curators of the museum: Dr. William Cayley, Sir William Henry Allchin, Dr. Seymour John Sharkey, and Dr. William Hunter. Finance committee: Dr. David Bridge Lees, Dr. Francis Henry Champneys, and Sir Edwin Cooper Perry. Examiners: Chemistry—Mr. W. Holdsworth Hurtley and Mr. George Senter; Physics—Dr. Dawson F. D. Turner and Mr. Alfred W. Porter; Materia Medica and Pharmacy—Dr. Cyril Ogle, Dr. Joseph John Perkins, Dr. Arthur Philip Beddard, Dr. Robert Arthur Young, and Dr. Otto Fritz Frankau Grünbaum; Physiology—Dr. William Dobinson Halliburton and Dr. Marcus Seymour Pembrey; Anatomy—Dr. Peter Thompson; Medical Anatomy and Principles and Practice of Medicine—Dr. Joseph Arderne Ormerod, Dr. Sidney Harris Cox Martin, Dr. Theodore D. Acland, Dr. Humphry Davy Rolleston, Sir Edwin Cooper Perry, Sir Hugh Reeve Beevor, Dr. James Galloway, Dr. Walter Essex Wynter, Dr. Wilfred James Hadley, and Dr. Laurence Humphry; Midwifery and Diseases peculiar to Women—Dr. John Phillips, Dr. Herbert Ritchie Spencer, Dr. William John Gow, Dr. Thomas Watts Eden, and Dr. George H. Drummond Robinson; Public Health—Part I., Dr. William Henry Willcox; Part II., Mr. Alexander Grant Russell Foulerton.

A report was received from Dr. Norman Moore, the Representative of the College on the General Medical Council, on the proceedings of the Council during its session in May and June last. This was received and ordered to be entered on the minutes.

Sir WILLIAM H. ALLCHIN proposed, and Dr. H. A. CALEY seconded, the following motion:—

That it is desirable that the University of London be approached by the Royal Colleges of Physicians and Surgeons with the object of establishing a system of conjoint examinations in accordance with the principle of Statute 123 of the University.

After Dr. J. F. PAYNE, Dr. H. R. CROCKER, Sir JAMES SAWYER, and Dr. L. E. SHAW had spoken, the motion was carried.

It was further resolved, on the motion of Dr. NORMAN MOORE, seconded by Dr. FREDERICK TAYLOR—

That a joint committee be formed by delegates from both Colleges for the purpose of considering and drafting a scheme which, if approved by the Colleges, should be submitted to the Senate of the University.

The President, the Registrar, Sir William Allchin, Dr. Norman Moore, Dr. Frederick Taylor, and Dr. H. A. Caley were nominated as the delegates of the College.

A report from the Murchison Scholarship Committee, appointed on April 30th last, was received, adopted, and entered on the minutes.

The annual report of the Imperial Cancer Research Fund was received and the following resolution in connexion with it was carried, on the motion of Dr. D. FERRIER, seconded by Dr. J. MITCHELL BRUCE:—

That Sir William Church, Bart., K.C.B., be re-elected a member of the executive committee of the Fund.

Dr. P. H. Pye-Smith was re-elected a member of the executive committee of the above Fund.

On the recommendation of the committee of management an amended syllabus for the examination in physics was adopted and it was resolved that it should come into force at the April examination next year. It was further resolved, on the recommendation of the same committee:—

(a) That the Swansea Borough Fever Hospital and the Cardiff Hospital for Infectious Diseases (the sanatorium) be added to the list of fever hospitals recognised for instruction for the Diploma in Public Health.

(b) That the course of operative surgery given at the Seamen's Hospital, Greenwich (Dreadnought Hospital), be recognised as fulfilling the conditions of Paragraph XXI., Clause 1 (i.), Section II. of the regulations of the Examining Board in England.

1. That Dr. Norman Moore be appointed visitor to the examinations of the Egyptian School of Medicine for the examinations to be held in December next.

2. That the following school which has been visited by a member of the committee and reported on as fulfilling the requirements of the Board be added to the list of institutions recognised by the Examining Board in England for instruction in chemistry and physics—viz.: S. Bee's School, Cumberland.

The quarterly report of the College finance committee, the annual report of the library committee, and the annual report of the curators of the museum were received and adopted.

A list of books and other publications presented to the

library during the past quarter was received and the thanks of the College were directed to be conveyed to the donors.

The quarterly report of the examiners for the Licence on the results of the examinations in April last was received and adopted

The newly elected officers, examiners, and members of standing committees gave their faith to the College.

The PRESIDENT then dissolved the Comitia.

MEDICO-PSYCHOLOGICAL ASSOCIATION.

THE annual meeting of this association was held in the rooms of the Medical Society of London on July 23rd and 24th, under the presidency of Dr. CHARLES A. MERCIER, who delivered an address on the Physical Basis of Mind.

He said that in whatever field of research man prosecuted his labours he had only to push his investigations far enough to find himself confronted with an insurmountable barrier of mystery. In contemplating the universe at large he found himself in the presence of infinite extension in space and infinite duration in time, both of them verbal expressions the meaning of which he was for ever incapable of comprehending. He speculates that matter consists of molecules, molecules of atoms, atoms of ions of negative electricity, which are themselves but metaphysical abstractions. We knew no more of the ultimate constitution of mind than of the ultimate constitution of matter, and yet alienists had constantly in daily work to postulate some mode of connexion between these two inscrutables. There were three theories of this connexion: dualism, which regards mind and matter as separate, and as acting and reacting on each other; monism, which regards mind and matter as obverse and reverse aspects of the same thing; and parallelism, which regards them as separate and disparate but invariably concomitant in their changes. The speaker did not propose to discuss these theories or to add to them a fourth, but he assumed that, whatever the connexion was, it prevailed throughout, and if it was true *simpliciter* it was true *secundum quid*. In other words, each of the qualities or faculties of mind had its answering correspondent in some modification of brain process and the object of the address was an endeavour to discover what these modifications were. The ultimate faculties of mind he regarded as memory, sensation, thought, will, desire and aversion, pleasure and pain. He took these seriatim and endeavoured to discover what process in the brain corresponded with each. Taking first memory as the simplest case, he showed that memory of mental processes accompanies recurrence or repetition of brain processes. Sensation is the mental state that arises when the nerve currents produced by impressions on the surface of the body are reflected in the highest regions of the brain and from incoming become outgoing currents. Thought is comparison; it is the juxtaposition of the mental states and on its physical side is the activity in immediate concussion of two areas of grey matter, each immediate concussion of activity being produced by the spread of motion from one area to the other. So far, there would be little difference of opinion. But the physical basis of will, of desire, and aversion, and pleasure and pain were matters that had received little attention. In dealing with will, the physical basis of which he regarded as the outpouring of motion from a central area of grey matter, Dr. Mercier laid stress upon the importance of preserving the inescapable responsiblity of each individual for his acts; and with respect to all the faculties of this second group, he pointed out how widely they differed from the first. Will, desire, and pleasure or pain, unlike sensation and thought, cannot be reproduced in memory, cannot be communicated from one to another, cannot be held in common. The physical basis of desire was regarded as a matter of the chemistry of the convolutions. It was shown how certain desires arose only in circumstances in which chemical changes occur in the blood, and are reflected in chemical alterations in the constitution of the convolutions, such alterations being, no doubt, the cause of subtle alterations in their mode of action. After considering various normal desires, the speaker went on to discuss the desire for alcoholic and other stimulants, and combated the notion that the difference between the drunkard and the sober man is the superior self-control of the latter. In his view the difference was not that the sober man had more self-control than the drunkard, but that drink produced in the drunkard an effect totally different from that which it produced on the sober. To the latter drink offered no allurement; it satisfied no craving; it yielded them no delight; it had for them no temptation. They were sober, not on account of any superiority of resistance but because, not being tempted by desire, they did not fall. Many persons could not get drunk if they tried. The difference was a constitutional difference, such that alcohol introduced into the blood produced a change in the nervous system of the drunkard which it did not produce in the nervous system of the sober. It produced in the one a chemical change that was not produced in the other. Additional proof of this position was found in the fact that the drunkard has no craving until he begins to drink, and when he has been deprived of drink long enough, the craving disappears until he takes it again. Dr. Mercier alluded to a previous hypothesis of his own, that the physical substratum of pleasure and pain resided in the condition of repletion or depletion with motion of the substrata of consciousness—that when the contained motion was great in quantity and of high tension, high ampèrage, and high voltage, the feeling was pleasurable, and that when the quantity and tension were low, then the feeling was one of misery. Reconsideration had led him to believe that this hypothesis could not be sustained. In many cases of disease in which the feeling of misery is extreme, movements are active and sustained, showing that nervous energy is copious and of high tension; and in stupor, a state which gives evidence of utter emptiness and depletion of motion of the nervous system, consciousness is not in a state of misery, but is deficient or absent. The conclusion at which the speaker had now arrived was, that the feeling of well-being was the conscious correlative of the arrival at the convolutions of currents of motion from tissues in which anabolism was active and preponderant over katabolism, and that the reverse condition of misery was accompanied by the supply of currents from tissues in which diabolism was at a minimum. In this hypothesis he found a reconciliation with Dr. F. W. Mott's supposition that "the sense of well-being of the whole personality depends upon an adequate supply of blood to each and all the important tissues of the body, whereby they can function in harmonious coöperation." It is obvious that such a supply of blood is an essential condition of active anabolism, but it is not the only condition. Another condition, equally essential, is an adequate supply of trophic nervous influence, and in this we see how easily a vicious circle may be set up and maintained. Faulty innervation depreciates anabolism and vitiates the quality of afferent nerve currents. The influence of vitiated afferent currents helps to maintain vitiated efferent trophic currents, and thus we account for the difficulty that is always experienced in rectifying the condition and rousing the melancholic out of his misery. After adducing further arguments in favour of this hypothesis the speaker dwelt on the ultimate practical importance of such recondite and abstract speculations, reminding his hearers of the astonishing practical results that had accrued from the study of the square root of minus one, a theme at first sight utterly divorced from all practical application.

A cordial vote of thanks to the new President was given.

The outgoing President and officers of the association were heartily thanked and Dr. P. W. MACDONALD replied.—Dr. T. OUTTERSON WOOD then presented the association with an album containing portraits of all presidents of the association from its commencement to the present time, with a typical extract from their writings. In the labour of their collection Dr. A. Urquhart had been associated with Dr. Wood.

It was announced that the bronze medal of the association had been gained by Dr. S. Carlisle Howard, assistant physician, Perth District Asylum. He was not present to receive it, but warm congratulations were expressed.

The adjourned discussion took place on Dr. R. CUNYNGHAM BROWN'S paper on the Boarding-out of the Insane in Private Dwellings, which was read at the Warwick meeting.—Dr. J. MILSOM RHODES said that 20 years ago he was more in favour of the boarding-out system than he was now. The system he now specially favoured was the colony system. The boarding-out system seemed to work in Scotland, but it seemed impossible for England, and great caution was

necessary with the system.—Dr. F. A. ELKINS expressed a contrary view, believing that harmless and incurable patients were better outside the asylum. The experiment could be tried by members of the staff of an asylum taking patients first.—Dr. T. S. CLOUSTON insisted that the chief care was the safety of the patients; there was no justification for being economical at the expense of the patient's welfare. With good supervision and good guardians he thought boarding out might well be tried, even in England.—Dr. T. W. MCDOWALL thought many of our pauper lunatics might be boarded out with advantage, and Dr. RAYNER also spoke in favour of the system.—Dr. E. H. O. SANKEY thought it would be a good thing to reduce the number of patients in all county asylums.—Dr. H. F. HAYES NEWINGTON said it was a pity there was a feeling that boarding out was definitely either good or bad, as the truth lay between the two. In certain cases it was bad enough. While in Inverness it was good, in Sussex it would be difficult to board out successfully. He advocated caution in the matter.—Dr. W. R. DAWSON pointed out that in Ireland, as the proportion of lunatics was greater than in the other countries of the kingdom and the peasantry were poorer, the matter was a very important one. In the West of Ireland the conditions were too poor to allow of boarding out in the way carried out in Scotland, but in the north of the country, where there was a decaying weaving industry, and around Dublin, it offered a good prospect of success.—Dr. C. HUBERT BOND expressed entire sympathy with the object of the paper and a willingness, should opportunity be afforded him, to give the system a thorough trial. But he offered a friendly challenge to the accuracy of several statements in the forepart of the paper which were in the nature of strictures upon the present position of county asylums, in particular as to there being any general lack of economy in their erection and equipment and as to there being any necessary failure of individuality in the treatment of the patients; by proper classification he thought such could always be obtained.—Dr. D. YELLOWLEES said that care must be taken that the person to be boarded out should be suitable for it; he must have no dangerous proclivities. The selection of the guardian was equally important. The Scotch experience seemed to show that it was to be very much commended, but in other places such might not be true.—The debate was adjourned.

Dr. ROBERT JONES read a paper entitled "The Case Against Dementia Præcox." He pointed out that the symptoms included in this were known since the time of Esquirol and that the same diseases differed in different persons. The form of mental disease suffered was indicated by the conduct of the patient. Stupor was the chief symptom in dementia præcox, and the feeling tone in the majority of cases was of the depressed type. He contended that there was no definite disease dementia præcox; the descriptions applied covered almost every possible variety of insanity and the term did not state whether it was of primary importance.—Dr. W. H. B. STODDART, Dr. T. DRAPES, Dr. PERCY SMITH, Dr. W. BEVAN-LEWIS, Dr. CLOUSTON, Dr. D. BOWER, Dr. BEDFORD PIERCE, and Dr. URQUHART discussed the paper, and further debate and reply were adjourned until the November meeting.

At the afternoon meeting Dr. ALAN MCDOUGALL read a paper on the Principles of the Treatment of Epilepsy, in which he urged that the patient rather than the fits should be treated. Treatment directed simply to getting rid of the fits was wicked; efforts should be made to enable the man to lead as comfortable a life as possible. A safe outlet must be provided for his egoism. So long as epileptics were sane they were more easily managed than ordinary people.—The paper was very fully discussed.

Lady HENRY SOMERSET gave an eloquent address on Some Aspects of Inebriety, in which she detailed many of her experiences at The "Home" and emphasised the fact that some bad cases of inebriety were insane, as Jane Cakebread was found to be after over 300 terms of imprisonment. In the process of reclaiming patients care of the teeth and the diet was emphasised and the avoidance of any duties which reminded the patient of her former life. The speaker enlarged upon the growth of the drug habit and the difficulty of restoring such cases.—A long discussion ensued and Lady HENRY SOMERSET replied to all the points seriatim.

Dr. ELKINS read a paper entitled "Asylum Officials: is it Necessary or Advisable for so many to Live on the Premises?" He made out a strong case for many of the minor officials to live out within easy reach and contended that it would brighten their lives.

In the evening a considerable number of the members and their guests dined together at the Criterion Restaurant, it being the first occasion at which ladies were present at the annual dinner.

BRITISH MEDICAL BENEVOLENT FUND.

AT the July meeting of the committee 25 cases were considered and grants amounting to £192 were made to 23 of the applicants. Appended is an abstract of the cases relieved:—

Daughter, aged 51 years, of late M.R.C.S., L.S.A. Has supported herself for many years but has recently been obliged to give up situation on account of ill-health. Voted £5.

Daughter, aged 61 years, of late L.R.C.S. Edin., F.R.C.S. Irel. Is a teacher of needlework, but is unable to earn as much as formerly and has been compelled to contract some small debts. Voted £5.

M.D. Aberd., aged 56 years. Used to have a good practice in a Midland town, but is quite incapacitated by spastic paralysis and during the progress of his illness has been compelled to live upon a sum borrowed upon a house which cannot now be sold for sufficient to repay the mortgage. Two children, aged ten and four. Voted £10 in two instalments.

Widow, aged 38 years, of L.R.C.P., L.R.C.S. Edin. Since husband's death six years ago has supported herself as a working housekeeper but is now incapacitated by phthisis. No children. Voted £5, with leave to apply again in six months.

Widow, aged 70 years, of L.R.C.P. Edin., M.R.C.S. Eng. Is in difficulties on account of debts unavoidably contracted during husband's long illness. Slight help from sons. Voted £12.

Widow, aged 54 years, of M.R.C.S., L.S.A. Income only a few shillings a week and two children still dependent, the others only being able to give very slight help. Voted £10.

Widow, aged 40 years, of M.R.C.S., L.R.C.P. Is a working housekeeper, but salary is insufficient for her own unavoidable expenses and the maintenance during their holidays of two children, aged 17 and 13 years. Relieved four times, £30. Voted £5.

Widow, aged 62 years, of L.R.C.S. Edin., L.F.P.S. Glasg. Has an annuity of £20 and earns a few shillings occasionally by addressing envelopes. Children unable to help. Relieved 11 times, £116. Voted £10.

Widow, aged 57 years, of L.R.C.P. Lond. Supplements income of a few shillings a week by taking lodgers. One daughter just self-supporting. Relieved three times, £15. Voted £5.

Daughter, aged 27 years, of late M.D. Dub. Is mentally and physically incapable of earning a living and dependent on a mother whose only income is an annuity of £20. Relieved four times, £20. Voted £5.

Daughter, aged 63 years, of late M.R.C.S., L.S.A. Has maintained herself for several years, but is now in bad health. Only income a small annuity provided by friends. Relieved once, £12. Voted £12.

Widow, aged 54 years, of M.R.C.S., L.S.A. No income. Five children, but none able to help and the youngest, a daughter of 17, dependent. Applicant and daughter are offered a home by a friend in Australia in exchange for services. Relieved four times, £40. Voted £10 towards passage money, providing the rest can be obtained.

Widow, aged 51 years, of M.B., C.M. Aberd. Endeavours to supplement an income of a few shillings a week by taking lodgers, but cannot earn sufficient for maintenance of herself and three children, aged 14 to 9. Relieved once, £10. Voted £5.

Widow, aged 49 years, of M.R.C.S. No income; keeps a boarding house, but is unavoidably in arrears with her rent. Children unable to help and one very delicate. Relieved once, £12. Voted £10.

Widow, aged 70 years, of M.R.C.S., L.S.A. Applicant's small income is insufficient for the maintenance of herself and four children, aged 47 to 42, three being deaf and dumb and one an epileptic. Relieved five times, £47. Voted £5.

Daughter, aged 56 years, of late L.R.C.P., L.S.A. Unable to earn a living on account of physical disabilities and dependent on a sister whose small earnings are decreasing. Relieved three times, £32. Voted £12.

Widow, aged 64 years, of L.R.C.P. Lond., L.R.C.S. Edin. No income; endeavours to support herself by needlework, but finds her eyesight failing. Only son out of work. Relieved twice, £20. Voted £10.

Widow, aged 57 years, of M.B., C.M. Edin. No income and in bad health. Only son, a clerk, at present unable to help. Relieved five times, £60. Voted £12.

Widow, aged 53 years, of M.B. Cantab. No income; is endeavouring to obtain lodgers. Children only able to give very slight help. Relieved five times, £65. Voted £12.

Daughter, aged 40 years, of late F.R.C.S. Has always been delicate and has recently developed phthisis. Mother's income insufficient to provide bare necessities. Relieved eight times, £72. Voted £12.

Widow, aged 51 years, of L.S.A. Quite unprovided for at husband's death two years ago and with assistance from this Fund has trained as a midwife. For the last nine months has been taking cases but earnings insufficient for maintenance of applicant and three children, aged nine to two and a half. Relieved once, £10. Voted £5.

Widow, aged 47 years, of L.R.C.P., L.R.C.S. Edin. No income and children only able to give very slight help. Relieved 12 times, £131. Voted £10.

Daughter, aged 69 years, of late M.R.C.S. Supported herself by taking boarders for many years but finds increasing difficulty in doing so and is unavoidably in arrears with rent and rates. Relieved once, £10. Voted £5.

METROPOLITAN HOSPITAL SUNDAY FUND.

A MEETING of the Council of the Metropolitan Hospital Sunday Fund was held at the Mansion House on July 30th, when, in the absence of the Lord Mayor, Archdeacon SINCLAIR presided. The meeting was convened for the purpose of receiving the report of the Distribution Committee and ordering the payment of the awards to the various hospitals, dispensaries, and nursing associations.

Among those present were Lord Cheylesmore, Sir William S. Church, Sir Savile Crossley, Sir E. Durning Lawrence, Sir Henry Burdett, the Hon. Sydney Holland, Canon Curtis, the Rev. H. R. Gamble, the Rev. E. H. Pearce, Mr. John H. Hale, Dr. J. G. Glover, and Mr. Thomas Wakley.

The report stated that the executors of the late Mr. George Herring will pay to the treasurer of the Fund £35,000, being the balance of income received for two years in respect of the existing investments after payment of certain expenses and previous charges, and that the committee recommend that this sum should be added to the collections, making the total of the Fund to date £72,386, in which is included a payment of £2000 on account of the legacy of £10,000 receivable under the will of the late Mr. Herbert Lloyd. This year 259 institutions had applied for grants from the Fund, being seven more than 1907. Three institutions were considered ineligible. The committee, while fully realising the excellent work carried on by the Cancer Hospital, had not made an award this year. The committee recommend that payment of the award to the Kensington General Hospital be deferred until the negotiations which were in progress between that institution and the King's Fund were satisfactorily concluded. The distribution of £70,000 to 166 hospitals and institutions, 60 dispensaries, and 29 nursing associations was recommended, 5 per cent. of the total sum available for distribution being set aside for the purchase of surgical appliances during the ensuing year, and 2½ per cent. for district nursing associations.

The secretary, Sir E. H. CURRIE, read the following resolution which was passed at a special meeting of the Council held previously to the ordinary meeting:—

That as there appears to be some doubt about the intention of the Council in passing their resolution relating to the Herring bequest on December 17th last, which read as follows: "That, in pursuance of the practice of Mr. Herring for some years, a sum of 5s. in the £ be added to the amount collected in places of worship in 1908 out of the moneys received from the Herring bequest," the same be and is hereby rescinded, and that the amount of available income each year be added to the collections, and that the recommendation of the Committee of Distribution for the present year be adopted.

Sir WILLIAM CHURCH, in moving that the report of the Committee of Distribution for the year 1908 be received and that the several awards be paid as soon as possible, called attention to the paragraph in the report in which the committee recommended "that payment of the award to the Kensington General Hospital be deferred until the negotiations which are in progress between that institution and the King's Fund are satisfactorily concluded." It was important that the King's Fund and the Metropolitan Hospital Sunday Fund should work together in unison. About three years ago the King's Fund was willing to do its best to obtain a hospital staff for the Kensington General Hospital and to put the institution upon a new basis. Those intentions, however, were not quite agreeable to the then government of the hospital and they fell through. The present condition of the hospital was not one which the King's Fund was inclined to support without further consideration and it was waiting until the hospital had a proper committee and a proper staff.

Lord CHEYLESMORE seconded the motion.

Dr. GLOVER, while being in sympathy with the remarks of Sir William Church with regard to the harmonious working of the two Funds, expressed the opinion that the paragraph referred to should clearly indicate that the Metropolitan Hospital Sunday committee had made independent inquiries.

Sir WILLIAM CHURCH pointed out that the Kensington General Hospital was really the old Jubilee Hospital. The matter had received the close consideration of the Distribution Committee.

Dr. GLOVER proposed an amendment to the effect that the paragraph in question should not receive the assent of the Council until a special inquiry and report of the Distribution Committee had been held.

Sir SAVILE CROSSLEY said that the report of the Distribution Committee of the Metropolitan Hospital Sunday Fund was based on that committee's own investigations and not upon any investigations made by the King's Fund.

Sir HENRY BURDETT continued the discussion, and on the suggestion of the CHAIRMAN that Dr. Glover should not press his amendment, and there being no seconder, the matter was allowed to drop.

The original motion was then adopted.

The Rev. E. H. PEARCE proposed and Canon CURTIS seconded the motion that the thanks of the Council be given to the Committee of Distribution for the care bestowed in the preparation of the awards, which was carried.

Sir HENRY BURDETT, in proposing that the thanks of the Council be given to the editors of newspapers who have pleaded the needs of hospitals and advocated the cause of this Fund, explained the system which was now adopted for raising money through the Hospital Sunday Fund. The system was to concentrate all their effort with the public and to confine it mainly to the week preceding Hospital Sunday. If the newspapers every day during that period, as some of them did, would give some notice of the Fund, public opinion would be concentrated on it and, as was proved in 1905, the coöperation of the newspapers would produce a large return from the churches and the public—a return which had not been reached or even approached in the current year. If the newspapers would only give the Fund a little more steady and organised support in the six days preceding Hospital Sunday the collections next year would possibly surprise them.

Mr. JOHN H. HALE seconded the motion and it was carried.

The proceedings terminated with a vote of thanks to the Lord Mayor for his devoted interest in the well-being of the Fund.

The following is a list of the awards recommended:—

GENERAL HOSPITALS.

	£	s.	d.
Charing Cross Hospital	1530	0	0
French Hospital	399	7	6
German Hospital	708	15	0
Great Northern Central Hospital	1255	5	6
Guy's Hospital	1575	0	0
Hampstead General Hospital	376	17	6
Italian Hospital	225	0	0
Kensington General Hospital	247	10	0
King's College Hospital	1800	0	0
London Hospital	6300	0	0
London Homœopathic Hospital	495	0	0
Phillips' Memorial Homœopathic Hospital	51	15	0
London Temperance Hospital	776	5	0
Metropolitan Hospital	1125	0	0
Mildmay Hospital	337	10	0
Miller Hospital and Royal Kent Dispensary	264	15	0
National Anti-Vivisection Hospital	*Nil.*		
North-West London Hospital	416	6	0
Poplar Hospital	832	10	11
Tottenham, Prince of Wales' General Hospital	724	17	6
Royal Free Hospital	1462	10	0
St. George's Hospital	562	10	0
SS. John and Elizabeth Hospital	371	5	0
St. John's Hospital, Lewisham	196	17	6
St. Mary's Hospital	2610	0	0
St. Thomas's Hospital	166	15	0
Seamen's Hospital Society	1665	0	0
The Middlesex Hospital and Convalescent Home	2700	0	0
University College Hospital	2553	15	0
Walthamstow, &c., Hospital	147	11	5
Wandsworth, Bolingbroke Hospital	318	18	0
West Ham Hospital	593	4	6
West London Hospital	1276	17	6
Westminster Hospital	1498	15	0

SPECIAL HOSPITALS.

CHEST HOSPITALS.

City of London Hospital for Diseases of the Chest, Victoria Park	900	0	0
Hospital for Consumption, Brompton	3420	0	0
Mount Vernon Consumption Hospital, Hampstead	1530	0	0
Royal Hospital for Diseases of the Chest, City-road	613	2	6
Royal National Sanatorium (Bournemouth)	112	10	0
Royal National Hospital for Consumption (Ventnor)	337	10	0

CHILDREN'S HOSPITALS.

Alexandra Hospital for Hip Disease, W.C.	433	2	6
Banstead Surgical Home	39	7	6
Barnet Home Hospital	61	17	6
Belgrave Hospital for Children	225	0	0
Cheyne Hospital for Incurable Children, S.W.	141	5	0
East London Hospital for Children, Shadwell, E.	1008	17	6
Evelina Hospital for Sick Children, Southwark, S.E.	225	0	0
Home for Incurable Children, Hampstead	84	7	6
Home for Sick Children, Sydenham, S.E.	171	0	0
Hospital for Sick Children, Great Ormond-street, W.C.	1096	17	6
Kensington, for Children, and Dispensary	95	12	6
Paddington Green Hospital for Children, W.	337	10	0
Queen's Hospital for Children, Hackney-road, N.E.	1001	5	0
Royal Waterloo Hospital for Children and Women	202	10	0
St. Mary's Hospital, Plaistow, E.	326	5	0
St. Monica's Hospital, Brondesbury, N.W.	95	12	6
Victoria Hospital for Children, Chelsea, S.W.	843	5	0
Victoria Home, Margate	45	0	0
Hospital for Hip Disease, Sevenoaks	56	5	0

LYING-IN HOSPITALS.

British Lying-in Hospital, Endell-street, W.C.	119	5	0
City of London Lying-in Hospital, City-road, E.C.	200	0	0
Clapham Maternity Hospital	45	0	0
East End Mothers' Home	84	7	6
General Lying-in Hospital, Lambeth, S.E.	101	5	0
Plaistow Maternity Hospital	67	10	0
Queen Charlotte's Lying-in Hospital, Marylebone-road, W.	579	7	6
Home for Mothers and Babies, Woolwich	45	0	0

HOSPITALS FOR WOMEN.

Chelsea Hospital for Women, S.W.	343	2	6
Hospital for Women, Soho-square, W.	500	12	6
Grosvenor Hospital for Women and Children, Vincent-square, S.W.	208	2	6
New Hospital for Women, Euston-road	399	7	6
Samaritan Free Hospital, Marylebone-road, W.	455	12	6

OTHER SPECIAL HOSPITALS.

Cancer Hospital, Brompton, S.W.	*Nil.*		
Middlesex Hospital, Cancer Wing	292	10	0
London Fever Hospital, Islington, N.	337	10	0
Gordon Hospital for Fistula, Vauxhall Bridge-road, S.W.	50	12	6
St. Mark's Hospital for Fistula, City-road, E.C.	292	10	0
National Hospital for the Diseases of the Heart, Soho-square, W.	191	5	0
Female Lock Hospital, Harrow-road, W.	281	5	0
Hospital for Epilepsy, Paralysis, and other Diseases of the Nervous System, Maida-vale, W.	236	5	0
National Hospital for the Paralysed and Epileptic, W.C.	1091	5	0
West End Hospital for Diseases of the Nervous System	472	10	0
Central London Ophthalmic Hospital, Gray's Inn-road, W.C.	196	17	6
Royal Eye Hospital, St. George's Circus, S.E.	359	15	0
Royal London Ophthalmic Hospital, City-road, E.C.	1248	15	0
Royal Westminster Ophthalmic Hospital, Charing Cross, W.C.	185	12	6
Western Ophthalmic Hospital, Marylebone-road, W.	118	2	6
Royal National Orthopædic Hospital, Great Portland-street, W.	225	0	0
Royal Sea Bathing Hospital, Margate	213	15	0
St. John's Hospital for Diseases of the Skin	56	5	0
St. Peter's Hospital for Stone, Covent Garden	135	0	0
Central London Throat and Ear Hospital, Gray's Inn-road, W.C.	19	2	6
Hospital for Diseases of the Throat, Golden-square, W.	16	17	6
London Throat Hospital, Great Portland-street, W.	28	2	6
Royal Ear Hospital, Dean-street, W.	51	15	0
Royal Dental Hospital of London, W.C.	416	5	0
National Dental Hospital, 149, Great Portland-street, W.	33	15	0

CONVALESCENT HOSPITALS.

Metropolitan Convalescent Institution, Walton	478	2	6
Ditto Ditto Broadstairs	303	15	0
Ditto Ditto Bexhill	573	15	0
All Saints' Convalescent Hospital, Eastbourne	450	0	0
All Saints' Convalescent Home, St. Leonards-on-Sea	28	2	6
Ascot Priory Convalescent Home	90	12	6
Brentwood Convalescent Home for Children	11	5	0
Charing Cross Hospital Convalescent Home, Limpsfield	73	2	6
Chelsea Hospital for Women Convalescent Home, St. Leonards	50	12	6
Metropolitan Hospital Home, Cranbrook	39	7	6
Deptford Medical Mission Convalescent Home, Bexhill	20	5	0
Mrs. Gladstone's Convalescent Home, Mitcham	96	12	6
Friendly Societies' Convalescent Home, Dover	112	10	0
Hahnemann Convalescent Home, Bournemouth	33	15	0
Hanwell Convalescent Home	13	10	0
Hastings, Fairlight Convalescent Home	31	10	0
Hendon, Ossulston Home	64	2	6
Herbert Convalescent Home, Bournemouth	22	10	0
Herne Bay Baldwin-Brown Convalescent Home	67	10	0
Homœopathic Hospital Convalescent Home, Eastbourne	16	17	6
Hemel Hempstead Convalescent Home	31	10	0
Mrs. Kitto's Convalescent Home, Reigate	56	5	0
London Hospital Convalescent Home, Tankerton	81	0	0
Mary Wardell Convalescent Home for Scarlet Fever	67	10	0
Police Seaside Home, Brighton	50	12	6
St. Andrew's Convalescent Home, Clewer	112	10	0
St. Andrew's Convalescent Home, Folkestone	202	10	0
St. John's Home for Convalescent and Crippled Children, Brighton	22	10	0
St. Joseph's Convalescent Home, Bournemouth	56	5	0
St. Leonards-on-Sea Convalescent Home for Poor Children	112	10	0
St. Mary's Convalescent Home, Shortlands	25	17	6
St. Michael's Convalescent Home, Westgate-on-Sea	39	7	6
Seaside Convalescent Hospital, Seaford	168	15	0

COTTAGE HOSPITALS.

Acton Cottage Hospital	91	2	6
Beckenham Cottage Hospital	92	5	0
Blackheath and Charlton Cottage Hospital	90	0	0
Bromley, Kent, Cottage Hospital	136	15	0
Bushey Heath Cottage Hospital	27	18	9
Canning Town Cottage Hospital	85	7	6
Chislehurst, Sidcup and Cray Valley Cottage Hospital	73	2	6
Coldash Cottage Hospital	24	15	0
East Ham Cottage Hospital	79	4	9
Eltham Cottage Hospital	69	15	0
Enfield Cottage Hospital	73	2	6
Epsom and Ewell Cottage Hospital	34	16	10
Hounslow Cottage Hospital	45	0	0
Livingstone Dartford Cottage Hospital	106	0	0
Kingston, Victoria Hospital	68	3	5
Mildmay Cottage Hospital	—	—	—
Reigate and Redhill Cottage Hospital	112	13	5
Sidcup Cottage Hospital	45	0	0
Tilbury (Passmore Edwards) Cottage Hospital	56	5	0
Willesden Cottage Hospital	123	15	0
Wimbledon Cottage Hospital	61	17	6
Wimbledon (South) Cottage Hospital	61	13	1
Wood Green Cottage Hospital	66	7	6
Woolwich and Plumstead Cottage Hospital	56	5	0

INSTITUTIONS.

Hospital for Invalid Gentlewomen, Harley-street	112	10	0
S. Saviour's Hospital and Nursing Home	112	10	0
Invalid Asylum, Stoke Newington	39	7	6
Firs Home, Bournemouth	42	15	0
St. Catherine's Home, Ventnor	22	10	0
Friedenheim Hospital for the Dying	365	10	0
Free Home for Dying, Clapham	126	0	0
St. Luke's House, Pembridge-square, W.	180	0	0
Santa Claus Home, Highgate	68	12	6
Royal Mineral Water Hospital, Bath	56	5	0
Winifred House, Holloway	64	2	6
Everafield, St. Leonards	*Nil.*		
Infants' Hospital, Westminster	112	10	0
All Saints', Highgate	24	15	0

DISPENSARIES.

Battersea Provident Dispensary	213	15	0
Billingsgate Dispensary	118	2	6
Blackfriars Provident Dispensary	22	10	0
Bloomsbury Provident Dispensary	16	17	6
Brixton, &c., Dispensary	53	18	5
Brompton Provident Dispensary	19	2	6
Buxton-street Dispensary	28	2	6
Camberwell Provident Dispensary	90	0	0
Camden Town Provident Dispensary	16	17	6
Chelsea, Brompton, and Belgrave Dispensary	50	12	6
Chelsea Provident Dispensary	11	5	0
Childs Hill Provident Dispensary	16	17	6
City Dispensary	56	5	0
Clapham General and Provident Dispensary	28	2	6
Deptford Medical Mission	28	2	6
Eastern Dispensary	42	15	0
East Dulwich Provident Dispensary	54	0	0
Farringdon General Dispensary	45	0	0
Finsbury Dispensary	63	0	0
Forest Hill Provident Dispensary	42	15	0
Greenwich Provident Dispensary	39	7	6
Hackney Provident Dispensary	20	5	0
Hampstead Provident Dispensary	69	15	0
Holloway and North Islington Dispensary	22	10	0
Islington Dispensary	68	12	0
Islington Medical Mission	49	10	0
Kennington and Vauxhall Provident Dispensary	15	15	0
Kensal Town Provident Dispensary	16	17	6
Kentish Town Medical Mission	23	12	6
Kilburn, Maida Vale, and St. John's Wood Dispensary	45	0	0
Kilburn Provident Medical Institution	56	10	0
London Dispensary, Spitalfields	18	0	0
London Medical Mission, Endell-street	153	0	0
Margaret-street, for Consumption	34	17	6
Metropolitan Dispensary	74	5	0
Mildmay Medical Mission Dispensary	22	10	0
Notting Hill Provident Dispensary	11	5	0
Paddington Provident Dispensary	39	7	6
Public Dispensary, Drury-lane, W.C.	33	15	0
Queen Adelaide's Dispensary	30	7	6
Royal General Dispensary	30	7	6
Royal Pimlico Provident Dispensary	54	0	0
Royal South London Dispensary	51	15	0
St. George's, Hanover-square, Dispensary	30	7	6
St. John's Wood Provident Dispensary	57	7	6
St. Marylebone General Dispensary	60	15	0
St. Pancras and Northern Dispensary	36	0	0
St. Pancras Medical Mission	24	15	0
South Lambeth, Stockwell, and North Brixton Dispensary	43	17	6
Stamford Hill, Stoke Newington Dispensary	63	0	0
Tower Hamlets Dispensary	56	5	0
Walworth Provident Dispensary	18	0	0
Wandsworth Common Provident Dispensary	16	17	6
Westbourne Provident Dispensary	22	10	0
Western Dispensary	76	10	0
Western General Dispensary	113	12	6
West Ham Provident Dispensary	14	12	6
Westminster General Dispensary	51	15	0
Whitechapel Provident Dispensary	38	5	0
Woolwich Provident Dispensary	38	5	0

NURSING ASSOCIATIONS.

Belvedere, Abbey Wood	8	11	0
Brixton	27	6	0
Central St. Pancras	20	10	0
Chelsea and Pimlico	27	6	0
Hackney	34	4	0
Hammersmith	54	14	0
Hampstead	20	10	0
Isleworth	13	13	0
Kensington	61	10	0
Kilburn	8	11	0
Kingston	34	4	0
Metropolitan (Bloomsbury)	68	6	0
St. Olave's (Bermondsey)	47	16	0
Paddington and Marylebone	47	16	0
Plaistow	68	8	0
,, (Maternity)	150	6	0
Rotherhithe	13	13	0
Shoreditch	88	16	0
Silvertown	12	16	0
South London (Battersea)	61	10	0
Tottenham	6	16	0
Southwark	81	0	0
South Wimbledon	21	7	0
Westminster	27	6	0
Woolwich	29	18	0
East London	177	13	0
North London	75	3	0
London District	482	0	0
Peckham	8	11	0

Looking Back.

FROM

THE LANCET, *SATURDAY*, August 7th, 1830.

The "Asthma" of Grinders of Cutlery.—"Might not criminals who have grossly violated the laws of their country, be condemned for life to fork-grinding, as, for minor offences, they are sentenced to the tread-mill?" Such is the inquiry of Dr. Arnold Knight on closing a paper* on the terrific effects of the occupation to which the grinders of Sheffield cutlery are subject. Some of the goods are ground on dry, others on wet grind-stones; and there is a third class ground both on wet and dry. Altogether the grinders amount to about two thousand five hundred; of this number about one hundred and fifty are fork-grinders; these grind dry, and die from twenty-eight to thirty-two years of age. The razor-grinders grind both wet and dry, and they die from forty to forty-five years of age. The table-knife grinders work on wet stones, and they live to betwixt forty and fifty years of age. Towards the close of the last century, it was found that the business of grinding had so much increased, that the grinding wheels already established were insufficient. It was impossible to add to their number, and in 1786 the steam-engine was resorted to. A great revolution accordingly took place in the circumstances of the grinder. He worked in a small low room, where there were eight or ten stones, and sometimes as many as sixteen persons employed at one time. The doors and windows were kept almost constantly closed; a great quantity of dust was evolved from so many stones, and there was scarcely any circulation of air to carry it away. The steam-engine, unlike the stream that had formerly supplied his wheel, allowed him no season of relaxation; it worked on an average eleven hours in the day, and six days in the week. The grinders began to reside more generally in the town; most of them lived near their respective wheels; their habits became less temperate, whilst the steady and industrious having now an opportunity of working as much as they pleased, died at an earlier age than even the idle and dissipated. So general has this destructive malady become of late years, that the result of some inquiries made in 1822, showed, that out of 2500 grinders, there were not 35 who had arrived at the age of fifty, and perhaps not double that number who had reached the age of forty-five; and out of more than eighty fork-grinders, exclusive of boys, it was reported that there was not a single individual thirty-six years old.

"As all attempts to cure the grinders' asthma, whilst the grinder continued to follow his employment, had failed, it was natural that the parties who were interested, should endeavour to find out some means of preventing it. Accordingly ingenuity was racked to discover those means, but one invention was choked with the dust, and another stopped but half of it; a third let the dust quite through, and a fourth was speedily worn out by it, and so on with a dozen apparatuses, the whole of which not being perfectly, although nearly, effectual, created indifference on the part of the men, and were one after the other gradually laid aside, leaving the grinding-stone of the dry cutler to be recommended in despair as an engine of punishment, fit only to be set in motion by the stern arm of the law.

* North of England Medical and Surgical Journal: No. 1. August, 1830.

ROYAL COLLEGE OF SURGEONS OF ENGLAND.

AN ordinary meeting of the Council was held on July 30th, Mr. HENRY MORRIS, the President, being in the chair.

It was resolved to issue diplomas of Membership to 98 successful candidates, and in conjunction with the Royal College of Physicians of London to issue diplomas of Public Health to 14 successful candidates.

The annual report of the Finance Committee was received showing a satisfactory record for the past financial year. There was an increase from the examination fees of the Membership, the Fellowship, and the Licence in Dental Surgery.

On the recommendation of the Committee of Management it was resolved to add the Cardiff Hospital for Infectious Diseases to the list of fever hospitals recognised for instruction for the Diploma in Public Health.

Sir WILLIAM S. CHURCH was re-elected a member of the executive committee of the Imperial Cancer Research Fund.

A letter was read from the Chancellor of the University of Cambridge stating that the Senate has decided to commemorate next year the centenary of Charles Darwin's birth (Feb. 12th, 1909) and the fiftieth anniversary of the publication of the "Origin of Species" (Nov. 24th, 1859), and inviting the College to nominate a delegate to take part in the commemoration which will be held on June 22nd, 23rd, and 24th, 1909. The President was appointed.

The PRESIDENT stated that the vacancy occasioned by the expiration of the term of office of Mr. P. Sidney Spokes on the Board of Examiners in Dental Surgery would be filled at the quarterly meeting of the Council in October.

It was resolved to hold the quarterly meeting of the Council in October on the 15th (the third Thursday).

A vote of thanks was given to Mr. C. H. Golding-Bird for presenting to the College a bas-relief of John Hilton, past President.

Mr. CLINTON T. DENT gave notice that at the next meeting of the Council he would move:—

1. That steps be forthwith taken to admit women to the examinations of the Conjoint Examining Board of England and to the examination for the Diploma in Public Health.
2. That women be admitted to the examinations for the Fellowship of the College and to the examinations for the Licence in Dental Surgery.

MEDICINE AND THE LAW.

The Dangers of Public Baths.

WHILE it is admitted on all hands that public baths and wash-houses are a boon to the working classes, it would seem that these institutions are not wholly free from danger. While cases of burns and scalds are not altogether unknown, it seems that those who use these institutions are exposed to even more insidious perils. In a case which was recently heard by Judge Parry at the Manchester county court, a woman claimed £10 damages from the Manchester corporation on the ground that it had been negligent in the management of the Leaf-street Baths by suffering a portion of the premises to become infested with "lice or other noxious vermin." In consequence she had to destroy clothing valued at £10. It was proved on behalf of the corporation that before and after a bather used a wash-bath it was carefully washed out with disinfecting fluid and that each day the room was cleaned and dusted and swept. The carpet was swept whenever it seemed to need it and washed when the matron thought it needed that, which might be once in two weeks or once in six weeks. In giving judgment his honour said that it seemed to him a negligent thing to place in a public bath a piece of carpet which every bather stood upon and which was peculiarly liable to be a source of infection. "Any medical officer of health," said the judge, "would agree as to that. It would be insanitary in an ordinary household, and it must be far more so in a public bath." He also held that there had not been such supervision of the baths as there ought to have been, and awarded the plaintiff £7. This is not the first time that a local authority working baths and wash-houses has been held liable for negligence. In an old case, a corporation which owned a wash-house allowed the public to use drying machines on making payment. A person using one of these machines which was worked by steam was dragged against it and injured. It was held that an action for negligence was maintainable and that the corporation was the proper party to be sued, notwithstanding that the affairs of the wash-houses were managed by a committee consisting of some only of the members of the corporation.

R. v. *Jefferson*, *R.* v. *Betts and the Defence of Insanity.*

In THE LANCET of July 25th attention was called to the conviction and sentencing to death of a man named Jefferson in the teeth of unusually strong medical evidence of his insanity when he committed the crime for which he was indicted. The Court of Criminal Appeal has lost no time in

LYING-IN HOSPITALS.

British Lying-in Hospital, Endell-street, W.C.	119	5	0
City of London Lying-in Hospital, City-road, E.C.	200	0	0
Clapham Maternity Hospital	45	0	0
East End Mothers' Home	84	7	6
General Lying-in Hospital, Lambeth, S.E.	101	5	0
Plaistow Maternity Hospital	67	10	0
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Cancer Hospital, Brompton, S.W.	*Nil.*		
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Brentwood Convalescent Home for Children	11	5	0
Charing Cross Hospital Convalescent Home, Limpsfield	73	2	6
Chelsea Hospital for Women Convalescent Home, St. Leonards	50	12	6
Metropolitan Hospital Home, Cranbrook	39	7	6
Deptford Medical Mission Convalescent Home, Bexhill	20	5	0
Mrs. Gladstone's Convalescent Home, Mitcham	95	12	6
Friendly Societies' Convalescent Home, Dover	112	10	0
Hahnemann Convalescent Home, Bournemouth	33	15	0
Hanwell Convalescent Home	13	10	0
Hastings, Fairlight Convalescent Home	31	10	0
Hendon, Ossulston Home	64	2	6
Herbert Convalescent Home, Bournemouth	22	10	0
Herne Bay Baldwin-Brown Convalescent Home	67	10	0
Homœopathic Hospital Convalescent Home, Eastbourne	16	17	6
Hemel Hempstead Convalescent Home	31	10	0
Mrs. Kitto's Convalescent Home, Reigate	56	5	0
London Hospital Convalescent Home, Tankerton	81	0	0
Mary Wardell Convalescent Home for Scarlet Fever	67	10	0
Police Seaside Home, Brighton	50	12	6
St. Andrew's Convalescent Home, Clewer	112	10	0
St. Andrew's Convalescent Home, Folkestone	202	10	0
St. John's Home for Convalescent and Crippled Children, Brighton	22	10	0
St. Joseph's Convalescent Home, Bournemouth	56	5	0
St. Leonards-on-Sea Convalescent Home for Poor Children	112	10	0
St. Mary's Convalescent Home, Shortlands	25	17	6
St. Michael's Convalescent Home, Westgate-on-Sea	39	7	6
Seaside Convalescent Hospital, Seaford	168	15	0

COTTAGE HOSPITALS.

Acton Cottage Hospital	91	2	6
Beckenham Cottage Hospital	92	5	0
Blackheath and Charlton Cottage Hospital	90	0	0
Bromley, Kent, Cottage Hospital	136	15	0
Bushey Heath Cottage Hospital	27	18	9
Canning Town Cottage Hospital	85	7	6
Chislehurst, Sidcup and Cray Valley Cottage Hospital	73	2	6
Coldash Cottage Hospital	24	15	0
East Ham Cottage Hospital	79	4	9
Eltham Cottage Hospital	69	15	0
Enfield Cottage Hospital	73	2	6
Epsom and Ewell Cottage Hospital	34	16	10
Hounslow Cottage Hospital	45	0	0
Livingstone Dartford Cottage Hospital	108	0	0
Kingston, Victoria Hospital	68	3	5
Mildmay Cottage Hospital	—		
Reigate and Redhill Cottage Hospital	112	13	5
Sidcup Cottage Hospital	45	0	0
Tilbury (Passmore Edwards) Cottage Hospital	56	5	0
Willesden Cottage Hospital	123	15	0
Wimbledon Cottage Hospital	61	17	6
Wimbledon (South) Cottage Hospital	61	13	1
Wood Green Cottage Hospital	68	7	6
Woolwich and Plumstead Cottage Hospital	56	5	0

INSTITUTIONS.

Hospital for Invalid Gentlewomen, Harley-street	112	10	0
S. Saviour's Hospital and Nursing Home	112	10	0
Invalid Asylum, Stoke Newington	39	7	6
Firs Home, Bournemouth	42	15	0
St. Catherine's Home, Ventnor	22	10	0
Friedenheim Hospital for the Dying	355	10	0
Free Home for Dying, Clapham	126	0	0
St. Luke's House, Pembridge-square, W.	180	0	0
Santa Claus Home, Highgate	68	12	6
Royal Mineral Water Hospital, Bath	56	5	0
Winifred House, Holloway	64	2	6
Eversfield, St. Leonards	*Nil.*		
Infants' Hospital, Westminster	112	10	0
All Saints', Highgate	24	15	0

DISPENSARIES.

Battersea Provident Dispensary	213	15	0
Billingsgate Dispensary	118	2	6
Blackfriars Provident Dispensary	22	10	0
Bloomsbury Provident Dispensary	16	17	6
Brixton, &c., Dispensary	53	18	5
Brompton Provident Dispensary	19	2	6
Buxton-street Dispensary	28	2	6
Camberwell Provident Dispensary	90	0	0
Camden Town Provident Dispensary	16	17	6
Chelsea, Brompton, and Belgrave Dispensary	50	12	6
Chelsea Provident Dispensary	11	5	0
Childs Hill Provident Dispensary	16	17	6
City Dispensary	56	5	0
Clapham General and Provident Dispensary	28	2	6
Deptford Medical Mission	28	2	6
Eastern Dispensary	42	15	0
East Dulwich Provident Dispensary	54	0	0
Farringdon General Dispensary	45	0	0
Finsbury Dispensary	63	0	0
Forest Hill Provident Dispensary	42	15	0
Greenwich Provident Dispensary	39	7	6
Hackney Provident Dispensary	20	5	0
Hampstead Provident Dispensary	69	15	0
Holloway and North Islington Dispensary	22	10	0
Islington Dispensary	68	12	0
Islington Medical Mission	49	10	0
Kennington and Vauxhall Provident Dispensary	15	15	0
Kensal Town Provident Dispensary	16	17	6
Kentish Town Medical Mission	23	12	6
Kilburn, Maida Vale, and St. John's Wood Dispensary	45	0	0
Kilburn Provident Medical Institution	58	10	0
London Dispensary, Spitalfields	18	0	0
London Medical Mission, Endell-street	153	0	0
Margaret-street, for Consumption	34	17	6
Metropolitan Dispensary	74	5	0
Mildmay Medical Mission Dispensary	22	10	0
Notting Hill Provident Dispensary	11	5	0
Paddington Provident Dispensary	39	7	6
Public Dispensary, Drury-lane, W.C.	33	15	0
Queen Adelaide's Dispensary	30	7	6
Royal General Dispensary	30	7	6
Royal Pimlico Provident Dispensary	54	0	0
Royal South London Dispensary	51	15	0
St. George's, Hanover-square, Dispensary	30	7	6
St. John's Wood Provident Dispensary	57	7	6
St. Marylebone General Dispensary	60	15	0
St. Pancras and Northern Dispensary	36	0	0
St. Pancras Medical Mission	24	15	0
South Lambeth, Stockwell, and North Brixton Dispensary	43	17	6
Stamford Hill, Stoke Newington Dispensary	63	0	0
Tower Hamlets Dispensary	56	5	0
Walworth Provident Dispensary	18	0	0
Wandsworth Common Provident Dispensary	16	17	6
Westbourne Provident Dispensary	22	10	0
Western Dispensary	76	10	0
Western General Dispensary	113	12	6
West Ham Provident Dispensary	14	12	6
Westminster General Dispensary	51	15	0
Whitechapel Provident Dispensary	38	5	0
Woolwich Provident Dispensary	38	5	0

NURSING ASSOCIATIONS.

Belvédere, Abbey Wood	8	11	0
Brixton	27	6	0
Central St. Pancras	20	10	0
Chelsea and Pimlico	27	6	0
Hackney	34	4	0
Hammersmith	54	14	0
Hampstead	20	10	0
Isleworth	13	13	0
Kensington	61	10	0
Kilburn	8	11	0
Kingston	34	4	0
Metropolitan (Bloomsbury)	68	6	0
St. Olave's (Bermondsey)	47	16	0
Paddington and Marylebone	47	16	0
Plaistow	68	8	0
,, (Maternity)	150	6	0
Rotherhithe	13	13	0
Shoreditch	88	16	0
Silvertown	12	16	0
South London (Battersea)	61	10	0
Tottenham	6	16	0
Southwark	41	0	0
South Wimbledon	21	7	0
Westminster	27	6	0
Woolwich	29	18	9
East London	177	13	0
North London	75	3	0
London District	492	0	0
Peckham	8	11	0

Looking Back.

FROM

THE LANCET, *SATURDAY*, August 7th, 1830.

The "Asthma" of Grinders of Cutlery.—"Might not criminals who have grossly violated the laws of their country, be condemned for life to fork-grinding, as, for minor offences, they are sentenced to the tread-mill?" Such is the inquiry of Dr. Arnold Knight on closing a paper* on the terrific effects of the occupation to which the grinders of Sheffield cutlery are subject. Some of the goods are ground on dry, others on wet grind-stones; and there is a third class ground both on wet and dry. Altogether the grinders amount to about two thousand five hundred; of this number about one hundred and fifty are fork-grinders; these grind dry, and die from twenty-eight to thirty-two years of age. The razor-grinders grind both wet and dry, and they die from forty to forty-five years of age. The table-knife grinders work on wet stones, and they live to betwixt forty and fifty years of age. Towards the close of the last century, it was found that the business of grinding had so much increased, that the grinding wheels already established were insufficient. It was impossible to add to their number, and in 1786 the steam-engine was resorted to. A great revolution accordingly took place in the circumstances of the grinder. He worked in a small low room, where there were eight or ten stones, and sometimes as many as sixteen persons employed at one time. The doors and windows were kept almost constantly closed; a great quantity of dust was evolved from so many stones, and there was scarcely any circulation of air to carry it away. The steam-engine, unlike the stream that had formerly supplied his wheel, allowed him no season of relaxation; it worked on an average eleven hours in the day, and six days in the week. The grinders began to reside more generally in the town; most of them lived near their respective wheels; their habits became less temperate, whilst the steady and industrious having now an opportunity of working as much as they pleased, died at an earlier age than even the idle and dissipated. So general has this destructive malady become of late years, that the result of some inquiries made in 1822, showed, that out of 2500 grinders, there were not 35 who had arrived at the age of fifty, and perhaps not double that number who had reached the age of forty-five; and out of more than eighty fork-grinders, exclusive of boys, it was reported that there was not a single individual thirty-six years old.

"As all attempts to cure the grinders' asthma, whilst the grinder continued to follow his employment, had failed, it was natural that the parties who were interested, should endeavour to find out some means of preventing it. Accordingly ingenuity was racked to discover those means, but one invention was choked with the dust, and another stopped but half of it; a third let the dust quite through, and a fourth was speedily worn out by it, and so on with a dozen apparatuses, the whole of which not being perfectly, although nearly, effectual, created indifference on the part of the men, and were one after the other gradually laid aside, leaving the grinding-stone of the dry cutler to be recommended in despair as an engine of punishment, fit only to be set in motion by the stern arm of the law.

* North of England Medical and Surgical Journal: No. 1. August, 1830.

ROYAL COLLEGE OF SURGEONS OF ENGLAND.

AN ordinary meeting of the Council was held on July 30th, Mr. HENRY MORRIS, the President, being in the chair.

It was resolved to issue diplomas of Membership to 98 successful candidates, and in conjunction with the Royal College of Physicians of London to issue diplomas of Public Health to 14 successful candidates.

The annual report of the Finance Committee was received showing a satisfactory record for the past financial year. There was an increase from the examination fees of the Membership, the Fellowship, and the Licence in Dental Surgery.

On the recommendation of the Committee of Management it was resolved to add the Cardiff Hospital for Infectious Diseases to the list of fever hospitals recognised for instruction for the Diploma in Public Health.

Sir WILLIAM S. CHURCH was re-elected a member of the executive committee of the Imperial Cancer Research Fund.

A letter was read from the Chancellor of the University of Cambridge stating that the Senate has decided to commemorate next year the centenary of Charles Darwin's birth (Feb. 12th, 1909) and the fiftieth anniversary of the publication of the "Origin of Species" (Nov. 24th, 1859), and inviting the College to nominate a delegate to take part in the commemoration which will be held on June 22nd, 23rd, and 24th, 1909. The President was appointed.

The PRESIDENT stated that the vacancy occasioned by the expiration of the term of office of Mr. P. Sidney Spokes on the Board of Examiners in Dental Surgery would be filled at the quarterly meeting of the Council in October.

It was resolved to hold the quarterly meeting of the Council in October on the 15th (the third Thursday).

A vote of thanks was given to Mr. C. H. Golding-Bird for presenting to the College a bas-relief of John Hilton, past President.

Mr. CLINTON T. DENT gave notice that at the next meeting of the Council he would move:—

1. That steps be forthwith taken to admit women to the examinations of the Conjoint Examining Board of England and to the examination for the Diploma in Public Health.
2. That women be admitted to the examinations for the Fellowship of the College and to the examinations for the Licence in Dental Surgery.

MEDICINE AND THE LAW.

The Dangers of Public Baths.

WHILE it is admitted on all hands that public baths and wash-houses are a boon to the working classes, it would seem that these institutions are not wholly free from danger. While cases of burns and scalds are not altogether unknown, it seems that those who use these institutions are exposed to even more insidious perils. In a case which was recently heard by Judge Parry at the Manchester county court, a woman claimed £10 damages from the Manchester corporation on the ground that it had been negligent in the management of the Leaf-street Baths by suffering a portion of the premises to become infested with "lice or other noxious vermin." In consequence she had to destroy clothing valued at £10. It was proved on behalf of the corporation that before and after a bather used a wash-bath it was carefully washed out with disinfecting fluid and that each day the room was cleaned and dusted and swept. The carpet was swept whenever it seemed to need it and washed when the matron thought it needed that, which might be once in two weeks or once in six weeks. In giving judgment his honour said that it seemed to him a negligent thing to place in a public bath a piece of carpet which every bather stood upon and which was peculiarly liable to be a source of infection. "Any medical officer of health," said the judge, "would agree as to that. It would be insanitary in an ordinary household, and it must be far more so in a public bath." He also held that there had not been such supervision of the baths as there ought to have been, and awarded the plaintiff £7. This is not the first time that a local authority working baths and wash-houses has been held liable for negligence. In an old case, a corporation which owned a wash-house allowed the public to use drying machines on making payment. A person using one of these machines which was worked by steam was dragged against it and injured. It was held that an action for negligence was maintainable and that the corporation was the proper party to be sued, notwithstanding that the affairs of the wash-houses were managed by a committee consisting of some only of the members of the corporation.

R. v. *Jefferson*, *R.* v. *Betts and the Defence of Insanity.*

IN THE LANCET of July 25th attention was called to the conviction and sentencing to death of a man named Jefferson in the teeth of unusually strong medical evidence of his insanity when he committed the crime for which he was indicted. The Court of Criminal Appeal has lost no time in

quashing this sentence and in substituting an order for the prisoner to be detained as a criminal lunatic during His Majesty's pleasure, an order which the Home Secretary would have made with equal promptitude if no court of criminal appeal had been instituted. Presumably the Treasury authorities took the initiative in order to obtain a result which is the only proper one in such a case, and it may be observed that the judges who heard the appeal were obviously surprised that a trial upon such facts as those recorded in the case should have had any other ending than a verdict of insanity. Mr. Justice Lawrance, in commenting upon what seemed to him a strange error on the part of the jury, hazarded the conjecture that the fact of there being now a court of appeal which would set them right if they were wrong had caused them to neglect their duty and to return a verdict which they would not have given had there been no superior court to revise it. References, however, to Mr. Justice Bigham's summing up as reported in the newspapers at the time of the trial will show that apparently the jury's verdict was one in accordance with his lordship's views of the requirements of the case, and that it was brought about by his summing up after medical evidence that Jefferson was not fit to plead had been disregarded. It was mentioned in the course of the appeal that the medical officer at Newcastle prison, where Jefferson had been confined immediately before his release, did not consider him to be insane, but this must have been an opinion formed before he had committed an aimless and insanely brutal murder, and probably without special attention having been drawn to his mental condition, and not one which should have been allowed to weigh against the contrary views formed by the other witnesses at a later date. That such an opinion should have been given, however, points to need of reform in our system of examining the mental condition of all persons confined in our prisons. Another case, in which also medical evidence of insanity was disregarded by the jury, was heard at the Old Bailey a few days after the trial of Jefferson. In this second case the person charged was a man named Betts, described as a retired merchant, who was indicted for shooting at his son-in-law, a Mr. Wood, with intent to murder him. As to the facts there was no dispute. There had been a family quarrel of long standing between the two men, apparently arising in some way out of a marriage settlement, and they had not met for eight years. One Sunday in May the prisoner, who had recently come south from Scotland, called at his son-in-law's house at Clapham but was told that no one was at home. Later in the day he saw his son-in-law outside a church talking to some friends, when he fired at him with a revolver from behind. The first bullet wounded the son-in-law in the shoulder, and his assailant then fired four more shots in succession, which missed their mark. At the trial of Betts before Mr. Justice Sutton, counsel, instructed presumably by the relatives of Betts, raised the defence that he was insane when he committed the act described, and the son-in-law whom he tried to kill told the jury in cross-examination that his father-in-law had been strange in his manner since his wife's death and that for some years he himself had not regarded him as a reasonable man. The prisoner's brother, called for the defence, corroborated this, giving various details, and Dr. James Scott, medical officer of Brixton Prison, deposed that he had had Betts under close observation since his arrest and that he considered him to have been insane for some years. The prisoner, however, protested very strongly against this view of his case, declared himself sane, represented that to send him to an asylum would be cruel, and avowed his readiness to face penal servitude. He was permitted to cross-examine Dr. Scott and to go into the witness-box to aver his own sanity, to describe his conduct of his business, and to state that he carried a revolver for self-defence, and that he had fired at his son-in-law without premeditation. As a result the jury found the prisoner guilty of unlawful wounding and after he had addressed the judge in mitigation of his own punishment Mr. Justice Sutton said: "The jury have taken a very merciful view of your case. I sentence you to 12 months' imprisonment without hard labour." The result thus attained is peculiar. Either the "mercy" of the jury has had the effect that a man who only failed to commit murder through the fact that he did not shoot straight is punished with a year in prison merely, or if the jury is wrong and Dr. Scott is right an insane person who has tried, and failed through no fault of his own, to kill one of his relatives will at the end of 12 months be at liberty to renew his attempt or to commit some dangerous act of a similar character. No doubt while this person is in prison there will be an opportunity to rectify an error, should the jury have committed one, but is it necessary to ask juries to give verdicts which on certain contingencies happening may be treated as nugatory? In the case upon which comment is now made, a case which the danger to human life rendered a very serious one, the Treasury might have been expected to put forward the strongest evidence possible as to the prisoner's mental condition, and it is surprising that in such circumstances the evidence of Dr. Scott should have been allowed to stand alone. In this case and in that of Jefferson it will be observed that practically uncontradicted medical evidence of mental unsoundness was disregarded by the two juries apparently with the concurrence of the two judges who presided. That medical men are unwilling to give evidence in courts of justice is not to be wondered at.

Public Health.

REPORTS OF MEDICAL OFFICERS OF HEALTH.

City of Dublin.—From Sir Charles A. Cameron's current annual report we learn that typhus fever is not yet extinct in Dublin, there having been during 1907 no fewer than 55 cases of the disease notified. The notifications came for the most part from Tyrone-street and its neighbourhood, and in nearly all the houses invaded there were the usual concomitants of typhus fever—poverty or filth. There were eight deaths. All this sounds very deplorable at this phase of Ireland's history and it is small wonder that pulmonary tuberculosis flourishes in Dublin and reaches a death-rate of 38 per 10,000. No proposals to erect sanatoriums will do much in face of the conditions which obtain in Dublin, but we are glad nevertheless to see that a beginning is to be made by providing a sanatorium for Dublin and the neighbourhood. The contributing authorities to the scheme can only make a penny rate and this will bring in about £5300. It is therefore to be hoped that a very economical building will be erected and that as many beds as practicable will be provided for the money. Let the essentials only be had regard to—i.e., abundance of good food, fresh air, rest, and discipline, all of which can be secured in the very cheapest buildings. Why not try tents in the first instance? Sir Charles Cameron thinks that Dublin has an undue share of poverty, evidence of which fact he finds in the very large proportion of deaths—nearly one half—which take place in charitable institutions. Moreover, 38 out of every 100 families have only one room apiece. The infantile mortality for 1907 was 156.

Borough of Halifax.—The infantile mortality of this borough was during 1907 the lowest on record—i.e., only 102 per 1000 registered births—and it is not improbable that this excellent result may be due in some measure to the lectures on the science of baby-rearing which are given by Dr. J. T. Neech, the medical officer of health. The council has adopted the Notification of Births Act and has appointed a lady health visitor. Dr. Neech seems to have been a little misunderstood because he suggested the provision by the council of incubators for prematurely born infants, but he is quite right in saying that they have been used in Paris for several years. The French have had to call all the resources of science to their aid to prevent the number of their births from falling below that of their deaths; indeed, we believe that the last returns do actually show an excess of deaths over births. As regards pulmonary tuberculosis there has been a marked reduction in the death-rate during recent years—from 2 per 1000 in 1881–90 to 1·2 per 1000 in 1901–07. Out of 107 cases notified during 1907 there was a history of one previous case in four families, two previous cases in two families, and four previous cases in one family. Dr. Neech regards the improved housing of the working classes and the improved social conditions of the people as having been the chief factors in promoting the fall.

Borough of Woolwich.—The council of this district subscribes for seven beds at Peppard Sanatorium and Dr. Sidney

Davies appears, on the whole, to be satisfied with the results. The beds seem to be devoted largely to educational purposes, as out of 40 patients discharged during 1907, 22 stayed only for one month and eight for three months, periods which are generally considered too brief to exert much permanent effect, good no doubt as the immediate results often are. We note, too, that of 11 cases discharged in 1904 there were in January, 1908, only two who were not either dead or lost sight of. Similarly, of 16 cases discharged in 1905 there were in January, 1908, only six actually known to be alive. It is, of course, wrong to rank the "lost sight of" as "dead," although it is not improbable that the majority of them are either dead or too ill to reply to the cards sent out. Some, of course, may be abroad. Dr. Davies, however, regards the stay of one month as being, on the whole, a satisfactory arrangement, since in his experience it suffices to enable the patients to resume work and to keep well under favourable conditions. He thinks, moreover, that the educational treatment suffices to prevent those educated from infecting others and he regards the figures of the last two years as indicating that an effect has already been produced. We think, however, that caution is desirable in drawing inferences at this stage, although we have little doubt that Dr. Davies is right when he says that the provision obtaining as regards sanatorium treatment enables the council to hear of cases early which otherwise would only come to light at or near death. The Plumstead well of the Metropolitan Water Board seems to be under some suspicion, the bacteriological and chemical characters of its water suggesting that Thames water is being drawn through the chalk more rapidly than is desirable, as on pumping more slowly the character of the water improves. The well water here in question is high in oxidised nitrogen, in oxygen absorption, in chlorine, and in hardness. It contained, too, in one sample bacillus coli-like organisms in 10 cubic centimetres but not in 1 cubic centimetre, and no flagellate bacillus coli in either 10 or 100 cubic centimetres. The water is still under observation. The Woolwich milk depôt which was opened in 1906 seems to be yielding good results.

VITAL STATISTICS.

HEALTH OF ENGLISH TOWNS.

In 76 of the largest English towns 8693 births and 3775 deaths were registered during the week ending August 1st. The annual rate of mortality in these towns, which had been so low as 11·1 and 11·9 per 1000 in the two preceding weeks, further rose slightly to 12·1 in the week under notice. During the first five weeks of the current quarter the death-rate in these towns averaged only 11·7 per 1000, while in London the rate did not exceed 11·0. The lowest annual death-rates in these 76 towns during the week under notice were 3·4 in Hornsey, 5·8 in Tottenham, 6·1 in Wolverhampton, and 6·4 in Reading; the rates in the other towns ranged upwards to 19·1 in Middlesbrough, 19·6 in Stockton-on-Tees, 19·9 in Bootle, and 20·9 in Wigan. In London the death-rate during the week did not exceed 11·5 per 1000. The 3775 deaths from all causes in the 76 towns showed a further increase of 63 upon the remarkably low numbers returned in recent weeks, and included 498 which were referred to the principal epidemic diseases, against numbers increasing from 299 to 403 in the four preceding weeks; of these 498 deaths 295 resulted from diarrhœa, 63 from measles, 50 from whooping-cough, 45 from diphtheria, 31 from scarlet fever, and 14 from "fever" (principally enteric), but not one from small-pox. The deaths from these epidemic diseases last week were equal to an annual rate of 1·6 per 1000, against 1·1 and 1·3 in the two preceding weeks; in London the death-rate from these epidemic diseases did not exceed 1·1 per 1000. No death from any of these epidemic diseases was registered last week in Derby, York, Halifax, Devonport, Willesden, or in four other smaller towns; the annual death-rates from these diseases ranged upwards, however, to 4·3 in Rhondda, 4·5 in Middlesbrough, 5·3 in Bootle, and 5·8 in Wigan. The deaths attributed to diarrhœa in the 76 towns, which had steadily increased during the seven preceding weeks from 63 to 192, further rose to 295 in the week under notice, and caused annual death-rates ranging upwards to 3·5 in Burnley and in Rhondda, 3·8 in Bootle, and 4·0 in Middlesbrough. The fatal cases of measles, which had been 75 and 80 in the two previous weeks, declined last week to 63, but caused death-rates equal to 1·0 in West Ham, 1·1 in Oldham, and 1·2 in Leyton. The 50 deaths from whooping-cough showed a further decline from recent weekly numbers, but this disease caused a rate equal to 2·0 per 1000 in Stockton-on-Tees. The 45 deaths referred to diphtheria, however, exceeded the number returned in any week since the beginning of June; this disease showed the highest proportional fatality in Salford and Manchester, in which towns seven fatal cases were registered. The 31 deaths from scarlet fever also showed an increase, and included 13 in London and its suburban districts and three in Liverpool. The 14 deaths referred to "fever" included two in Wigan, equal to an annual rate of 1·2 per 1000. The number of scarlet fever patients under treatment in the Metropolitan Asylums and the London Fever Hospitals, which had been 2573 and 2665 at the end of the two preceding weeks, had further increased to 2727 on August 1st; 363 new cases were admitted to these hospitals during the week under notice, against 437, 349, and 423 in the three preceding weeks. The deaths in London referred to pneumonia and other diseases of the respiratory organs, which had been 104 and 121 in the two preceding weeks, further rose to 126 in the week under notice, and exceeded by eight the corrected average number in the corresponding week of the five years 1903-07. The causes of 37, or 1·0 per cent., of the deaths registered in the 76 towns last week were not certified either by a registered medical practitioner or by a coroner. All the causes of death last week were duly certified in West Ham, Newcastle-on-Tyne, Brighton, Portsmouth, Leicester, Nottingham, Salford, and in 47 other smaller towns; five uncertified causes of death were, however, registered in Birmingham, four in Sheffield, three in Liverpool, and five out of 27 deaths in Gateshead.

HEALTH OF SCOTCH TOWNS.

The annual rate of mortality in eight of the principal Scotch towns, which had been equal to 12·9 and 14·3 per 1000 in the two preceding weeks, declined again to 13·5 in the week ending August 1st. During the first five weeks of the current quarter the annual death-rate in these eight towns averaged 13·3 per 1000, and exceeded by 1·6 the mean rate during the same period in the 76 English towns. Among the eight Scotch towns the death-rates during the week under notice ranged from 7·4 in Perth and 11·6 in Paisley to 14·4 and 17·3 in Edinburgh and Dundee. The 476 deaths in the eight towns showed a decline of 29 from the number in the previous week, and included 61 which were referred to the principal epidemic diseases, against 54 and 66 in the two preceding weeks; of these 61 deaths 30 resulted from diarrhœa, 18 from whooping-cough, six from diphtheria, four from "fever," two from measles, and one from scarlet fever, but not one from small-pox. These 61 deaths were equal to an annual rate of 1·7 per 1000, the mean rate from the same diseases in the 76 English towns during the week being 1·6 per 1000. The deaths attributed to diarrhœa in the eight towns, which had been 26 and 30 in the two preceding weeks, were again 30 in the week under notice; they included 13 in Glasgow, five in Dundee, four in Paisley, three in Edinburgh, and two both in Leith and in Aberdeen. The 18 fatal cases of whooping-cough showed a decline of seven from the number in the previous week; 11 were returned in Glasgow, three in Edinburgh, and two in Dundee. The six fatal cases of diphtheria showed an increase upon recent weekly numbers; of these, three occurred in Glasgow, two in Dundee, and one in Edinburgh. Of the four deaths referred to "fever" three were certified as cerebro-spinal meningitis and one as enteric; three were recorded in Glasgow and one in Edinburgh. The fatal cases both of measles and of scarlet fever were fewer than those returned in recent weeks. The deaths referred to diseases of the respiratory organs in the eight towns, which had been 63 and 50 in the two preceding weeks, further declined to 41 in the week under notice, and were 27 below the number returned in these towns in the corresponding week of last year. The causes of 15, or 3·2 per cent., of the deaths registered in the eight towns during the week were not stated or not certified; in the 76 English towns

during the same week the proportion of uncertified causes of deaths did not exceed 1·0 per cent.

HEALTH OF DUBLIN.

The annual rate of mortality in Dublin, which had been equal to 20·0, 18·4, and 17·2 per 1000 in the three preceding weeks, further declined to 16·8 in the week ending August 1st. During the first five weeks of the current quarter the death-rate in Dublin averaged 18·0 per 1000; the mean rate during the same period did not exceed 11·0 in London and 12·0 in Edinburgh. The 127 deaths of Dublin residents registered during the week under notice showed a further decrease of three from the declining numbers in recent weeks, and included 19 which were referred to the principal epidemic diseases, against numbers steadily increasing from 11 to 17 in the four preceding weeks. These 19 deaths were equal to an annual rate of 2·5 per 1000, the rate during the week from the same diseases not exceeding 1·1 in London and 1·3 in Edinburgh. Of the 19 deaths from these epidemic diseases in Dublin last week, 12 resulted from diarrhœa, two from measles, two from whooping-cough, and one each from scarlet fever, diphtheria, and "fever," but not one from small-pox. The fatal cases of diarrhœa showed an increase of three upon the number returned in each of the two preceding weeks, while those of measles showed a decline. The 127 deaths from all causes during the week included 31 of infants under one year of age and 26 of persons aged upwards of 60 years; the deaths of elderly persons showed a further decline from the numbers returned in recent weeks. Four inquest cases and four deaths from violence were registered, and 48, or 38·6 per cent., of the deaths registered during the week occurred in public institutions. The causes of four, or 3·2 per cent., of the deaths registered were uncertified; the causes of all but one of the 1057 deaths registered in London last week were duly certified, and in Edinburgh the proportion of uncertified causes did not exceed 2·1 per cent.

THE SERVICES.

ROYAL ARMY MEDICAL CORPS.

Major F. A. Symons has been selected for duty in Ceylon and Captain F. M. Parry has been selected for the Adjutancy of the School of Instruction, Home Counties Division, Territorial Force.

The following candidates for commissions in the Royal Army Medical Corps were successful at the recent examination in London, for which 48 candidates entered.

	Marks.		Marks.
D. S. Buist	640	C. Clarke	530
C. Ryles	600	A. N. R. McNeill	530
S. M. Saunders	593	H. Bevis	516
W. E. Marshall	571	A. R. Wright	515
G. G. Collett	566	A. W. Byrne	511
R. W. Vaughan	566	C. H. O'Rorke	511
A. M. Pollard	562	G. S. Parkinson	510
H. Gell	561	T. J. Mitchell	504
T. B. Nicholls	557	F. H. Somers Gardner	503
J. B. Jones	552	H. N. Leeson	502
W. G. Wright	547	S. W. Kyle	497
J. A. Clark	546	D. R. G. Pottinger	496
A. T. J. McCreery	544	J. W. Lane	490
C. G. Sherlock	536	G. H. Stack	490
J. Startin	533	D. H. C. Macarthur	486

INDIAN MEDICAL SERVICE.

The King has approved of the retirement of Major Baman Das Basu (dated May 1st, 1908).

Surgeon-General P. H. Benson has been appointed Honorary Surgeon to the Viceroy.

THE HOME HOSPITALS RESERVE.

An Army Order states that the formation, as from April 1st, 1908, of a Home Hospitals Reserve for duty in the military hospitals has been approved. The function of this reserve will be to staff the military hospitals in England, Scotland, and Ireland upon the mobilisation and withdrawal of the Regular Royal Army Medical Corps for duty in the field. The reserve for England and Ireland will be composed of members of the ambulance department of the Order of St. John of Jerusalem in England; that for Scotland of members of the St. Andrew's Ambulance Association.

THE STAMPING OUT OF BERI-BERI.

The *Times* states that a society of members of the medical profession has been formed in Tokio with the object of studying means of stamping out beri-beri, a disease which attacked many soldiers during the recent war in Manchuria. The chief of the Japanese Army Medical Department has accepted the presidency of the society.

Correspondence.

"Audi alteram partem."

ELEMENTARY CHEMISTRY (?).

To the Editor of THE LANCET.

SIR,—May I be permitted to direct attention to a question asked in a recent examination in organic chemistry for medical students, the syllabus for which states that "the whole subject is to be treated in an elementary manner." The question was "On analysis an acid whose melting point was 190° C. gave the following results: 0·2159 gram. gave 0·3595 CO_2 and 0·1209 H_2O. On titrating with ammonia (1 c.c. = 0·00334 NH_3) 0·4859 gram. of the acid required 37·52 c.c. From these data calculate the molecular formula of the acid." Assuming that by the term molecular formula structural formula is meant—else why is the melting point given?—and assuming that the acid does not contain nitrogen the empirical formula $C_5H_8O_4$ agrees well with the data given. Of the many dibasic acids of this formula no one melts at 190°, the nearest being dimethylmalonic acid, which melts at 192°. But apart from any slight error of this kind, is it to be expected that candidates, in a subject which is to be treated in an elementary manner (or, so far as that goes, in any manner whatever) and who may not consult books of reference during the examination, should be required to know the melting points of all the dibasic acids?

I am, Sir, yours faithfully,

The University, Manchester, July 29th, 1908. J. F. THORPE.

AMYL NITRITE IN UTERINE HÆMORRHAGE.

To the Editor of THE LANCET.

SIR,—In a series of articles on the "Mechanism of the Paroxysmal Neuroses," contributed to the *Australasian Medical Gazette* in 1903, I referred incidentally to the mode of action of amyl nitrite and to its practical utility in checking many forms of internal hæmorrhage more or less inaccessible. Stress was laid more especially upon its rapid hæmostatic influence in hæmorrhage from the lungs and uterus. Since then amyl nitrite has been widely and successfully used in hæmoptysis, but the fact that it is equally efficient in uterine (amongst other) hæmorrhages, would seem to have escaped the notice of all but a very few. Quite recently, Mansell Moullin, speaking of uterine fibroids, said: "I think it unnecessary to state that the treatment I refer to is surgical, for there is no other treatment worth the name, or our consideration. All attempts to cure fibroids by electrolysis and other methods have conspicuously failed, and drugs exert no influence upon them whatever, *even to the extent of controlling hæmorrhage.*"[1] (Italics mine.) Nor can I find more than two published cases in which amyl nitrite has been used in uterine hæmorrhage. The first was a case of rather severe and protracted menorrhagia supposed to depend on "adenoma of the endometrium." Inhalation of three minims of amyl nitrite promptly stopped the flooding on four occasions and the ultimate result was good.[2] The second was a case of post-partum hæmorrhage, in which the bleeding was almost immediately arrested by a capsule of the drug inhaled during extraction of the placenta.[3]

My first experiment on the influence of amyl nitrite on the menstrual flow was an unwitting one and has been already referred to.[4] A lady suffered from menstrual

[1] West London Medical Journal, January, 1908, p. 1.
[2] Horace C. Colman in Scottish Medical and Surgical Journal, May, 1905.
[3] J. K. Keith in Brit. Med. Jour., Oct. 27th, 1906, p. 1125.
[4] THE LANCET, August 20th, 1904, p. 524.

angina pectoris which always subsided instantaneously under amyl nitrite inhalation. But synchronously with the pain the flow also always ceased, to reappear with a fresh breast-pang two or three days later. Thus the menstrual periods became broken up and irregularly distributed throughout the month. And since they always accompanied the commencement of the flow the anginal seizures became considerably increased in number. Eventually the use of the drug was discontinued and then the menstrual process, together with the attacks of angina, slowly returned to regularity. Since then I have used amyl nitrite in the following cases of uterine hæmorrhage, and in these five cases only.

CASE 1.—A woman, aged 43 years, no family, became very anæmic and almost unable to continue her work. Inquiry elicited that for nearly a year the menstrual periods had been profuse and increasing in duration. The present period had lasted three weeks and showed no tendency to terminate. She refused examination and was consequently ordered to lie down in the afternoon and inhale three minims of amyl nitrite. The first inhalation instantaneously and completely arrested the hæmorrhage for nearly 24 hours. Bleeding then recommenced and the nitrite was repeated. The same result followed, but there was a second slight reappearance 24 hours later and she was again treated. She thus had three inhalations at intervals of about 24 hours. After this there was no further hæmorrhage for five weeks, when I lost sight of her. She had improved greatly in colour.

CASE 2.—A woman, aged 38 years, had undergone a series of operations, vaginal and abdominal, for prolapse and flexion of the uterus. As one result she became addicted to the use of morphia hypodermically. Whenever the amount injected in the day rose above two grains menstruation always ceased; she had gone 12 months without a period. In the course of reduction the flow would reappear at about the same stage—namely, two grains per diem. When eventually the drug was cut off altogether, she became regular, but the re-established periods steadily became more profuse and prolonged. Her last period had endured for 17 days, and she was commencing to show signs of anæmia. One three-minim inhalation was then given at bed-time. This completely terminated the period.

CASE 3.—A woman, aged 28 years, had undergone the operation of removal of the vermiform appendix. One ovary and tube being found diseased were also removed. I saw her a year subsequently. She then had a considerable ventral hernia. She was also troubled with menorrhagia, associated with ovarian and sacral pain sufficient to incapacitate her for the time being. She was directed to allow each period to last three days and then terminate it by inhaling three minims of amyl nitrite at bedtime. This she found no difficulty in effecting. The ovarian and sacral pain always ceased synchronously with the flushing of the face and the cessation of the flow.

CASE 4.—An unmarried woman, aged 37 years, suffering from intramural fibroid. The uterus measured by the sound about five inches but there were no pressure symptoms. The menorrhagia being severe, she was obliged to pass about ten days of each month confined to her bed. She had undergone a long course of treatment by bromide of potassium, ergot, and ergotin hypodermically without apparent benefit, but she had refused to submit to any radical operation. It was found in her case that the bleeding could be completely controlled by amyl nitrite. A single inhalation could always be counted on to check hæmorrhage for at least 24 hours, provided she remained in bed or on the couch, and an average of three was sufficient to tide her over each period. Further, she was able to be up and about except for some three days each month. Some six months later I was informed that the size of the uterus was materially less.

CASE 5.—An unmarried woman, aged 49 years, suffering from inoperable carcinoma of the cervix and vagina. She had had several scraping operations performed, which, however, failed to check the hæmorrhage except for quite short periods. Plugging had been resorted to on one or two occasions. Amyl nitrite in doses of from 3 to 5 minims was given by inhalation on five or six occasions. It never failed to effect an almost complete hæmostasis, lasting for from one to three days.

The *rationale* of the action of amyl nitrite in arresting hæmorrhage from the uterus seems simple. By dilating the arterioles generally it diminishes the peripheral resistance. Thus, it reduces the general blood pressure and thereby the vascular distension of the uterine mucosa. In this way it strikes out or modifies one of the essential factors in all uterine hæmorrhage, whether this be physiological or pathological in kind. Consequently the nature of the morbid condition primarily responsible for pathological hæmorrhage has no special bearing on the utility of the drug. Other things being equal, this should be as great in malignant disease as in mere subinvolution or the simpler forms of endometritis. Although there was no instance of failure yet the number of cases reported are inadequate to settle definitely the permanent place to be accorded to amyl nitrite in uterine hæmorrhage. But I am in hopes that some of those who have greater opportunities will take up the matter and test it systematically. It seems not unlikely that some cases of fibroid disease in which hæmorrhage is the sole dangerous symptom may be by means of amyl nitrite tided over until the menopause without the necessity for any major operation. And there are always some patients who refuse to submit to surgical treatment.

Meantime a few obvious dangers may be mentioned. The very facility with which uterine hæmorrhage, normal or abnormal, is checked may become indirectly a source of danger. The sudden arrest of the normal menstrual flow may be fraught with serious sequelæ. The use of the drug by the patient herself may lead to the deferment of a highly necessary examination in cases of carcinoma. I have in one case seen this tendency exhibited already. Finally, in cases of advanced malignant disease there is often already present a very low blood-pressure, and it may be that the further sudden reduction consequent on inhalation of the nitrite would actually endanger life. This point has been referred to by Leonard Williams in commenting on the routine treatment of phthisical hæmoptysis by amyl nitrite. Yet, so far as I know, no disaster has yet been recorded which could clearly be ascribed to the drug.

I am, Sir, yours faithfully,

July 28th, 1908. FRANCIS HARE, M.D. Durh.

A QUESTION OF COMPENSATION.

To the Editor of THE LANCET.

SIR,—I think you will agree with me that the facts of the following case are so important to governors of hospitals, trustees of nursing institutes, and others who have insured their employees under the Employers' Liability Act that they ought to be generally known. One of the nurses connected with the Beccles Nursing Institute had the misfortune to infect her eye while attending a case of purulent ophthalmia in an infant. Purulent ophthalmia was in consequence set up in the nurse's eye. This was followed by panophthalmitis and it was necessary to remove the right eye in order to save the sight in the remaining organ. This nurse was insured under the Employers' Liability Act and the premium paid was 7*s.* 6*d.* per cent. on her wages per annum. On applying to the insurance office for compensation the trustees of the Nursing Institute were informed that under the Act there is no compensation for pain and suffering, disfigurement, or anything of the kind, but that she was simply entitled to half the loss of earnings; that the directors of the office considered that the nurse would be as well able to earn her living as a nurse with one eye as with two; that they did not consider themselves bound to make any payment to her, but as a matter of charity they offered her 20 guineas and this they subsequently increased to 30 guineas. The nurse had claimed £50. This offer of the directors was by their advice submitted by the trustees to a solicitor and his opinion was that it should be accepted, as although he thought that the view taken by the directors might not be correct, yet he was very doubtful whether the nurse would succeed in any action for damages. The trustees therefore accepted the offer made.

If this interpretation of the law be correct it would seem that the accidents to which nurses are especially liable, such as that which occurred in this case, pyæmia, &c., are not provided for, and it would seem desirable either that a test case should be tried to determine the meaning of the Act, or that those having to insure nurses should find some sort

of policy which would cover these risks. Possibly there may be some association with which I am unacquainted which watches over the interests of nurses and which provides for these contingencies.

I am, Sir, yours faithfully,

W. M. CROWFOOT, M.A., F.R.C.S. Eng.

Beccles, August 3rd, 1908.

STUDY OF TROPICAL MEDICINE IN LIVERPOOL.

To the Editor of THE LANCET.

SIR,—I beg to call your attention to the new course of instruction which will be given to the students of the Liverpool School of Tropical Medicine at the University of Liverpool after the beginning of next year. For a considerable period the teachers of the school have reported to the committee of the school that the time allotted for the course of instruction—namely, the academical term, or about ten weeks—was insufficient to give a complete curriculum on the subject, especially as, owing to the recent numerous great advances in our knowledge of tropical medicine, the subject had been very much enlarged of late. The school therefore has determined to add three weeks to the ten weeks' period of study, and the University has decided to give its Diploma in Tropical Medicine only to students who had undergone this course of 13 weeks. It is hoped that this change will result in still more complete instruction and a still more valuable diploma.

Owing, however, to the lengthened term it will not be possible to give more than two such courses every year, and the courses have therefore been fixed to begin on Jan. 6th and Sept. 15th every year, the corresponding examinations for the diploma being held 13 weeks later—that is to say, about April 5th and Dec. 13th respectively. In addition, however, to these two full courses the school has arranged to introduce an innovation in the form of a short course lasting only one month for practical instruction in tropical pathology and medical entomology, to be given from June 1st to 29th every year. It is hoped that this will be of the greatest utility to medical men returning on short leave to England, as it will enable them to acquire the practical technique of microscopic and similar work which has been much desired by many of them. After the four weeks' short course a class examination will be held and a certificate will excuse for the first four weeks of the full Lent and autumn courses.

The University and the school desire to have this information regarding the changes referred to spread as widely as possible for the use of medical men in the tropics, and I am therefore to request you, Sir, to be kind enough to give some notice of it in your valuable periodical.

I am, Sir, yours faithfully,

Liverpool. ALFRED L. JONES, Chairman.

EVIDENCE OF HOUSE PHYSICIANS AND HOUSE SURGEONS IN CASES OF ATTEMPTED SUICIDE, ETC.

To the Editor of THE LANCET.

SIR,—My attention has recently been again attracted to the inconvenience at hospitals resulting from the necessary (or unnecessary) attendance of members of the resident staff at law courts to give evidence in cases of attempted suicide, &c. The following is an instance which has just occurred at the hospital to which I am attached. Twice recently a young woman has been brought to the hospital after attempting suicide by swallowing a little carbolic acid or lysol, and on each occasion she had to be admitted for a day or two. On both occasions also the house physician was afterwards obliged to give up his work at the hospital owing to a "subpœna" to attend at the law court. Yesterday he had to be away from 9.30 A.M. to 5.30 P.M., and as the case did not come off he had to leave the hospital again this morning at 9.30 A.M. The inconvenience caused to the working of one of the smaller hospitals by this kind of thing is obviously very great. In regard to the case of an insane woman who unsuccessfully attempted to murder her children and commit suicide one of the house surgeons had to attend at the Central Criminal Court on four days from about 10 A.M. to 4 or 5 P.M. before the case was heard. When at last this case came on it was finished in a few minutes without the house surgeon's *spoken* evidence being taken. Cannot anything be done to minimise the difficulties arising at small hospitals in this way?

I am, Sir, yours faithfully,

F. PARKES WEBER, M.D. Cantab.

Harley-street, W., July 30th, 1908.

THE DAIRIES SUPERVISION ACT IN NEW SOUTH WALES.

To the Editor of THE LANCET.

SIR,—As a veterinary surgeon and an officer of the Board of Health I cannot but note with satisfaction the increased attention which appears to be arising in England on the subject of dirty and tuberculous milk and I have thought that a short account of what is done in New South Wales to insure purity of milk-supply might be of interest.

In 1901 an Act entitled the Dairies Supervision Act was passed to consolidate various enactments regulating the production, manufacture, and distribution of milk and its products. The administration of the Act was charged to the local authorities—in towns the municipal councils thereof and in districts beyond those boundaries the senior police officer of the district—and their principal duties are laid down as being the keeping of a register of all persons engaged in the production of milk or cream or in the manufacture of butter or cheese for sale or supply for profit and conducting quarterly inspections of the premises, appliances, and cattle of all such persons. To the local authorities are granted powers of entry and of taking samples of milk and its products or of water from any water-supply used on the premises; to enforce cleanliness and good sanitary conditions on any premises; to close any polluted source of water-supply; and to refuse or to cancel the registration of anyone whose premises are insanitary or who refuses to carry out any order for the improvement of these conditions. Any dairyman, &c., trading without being registered is liable to a penalty not exceeding £20. Regulations have been issued under the Act defining the necessary conditions to be observed in building cowsheds, milk-rooms, &c.; for maintaining them in a sanitary condition; for the keeping of pigs; to prevent the use of milk from diseased animals and forbidding the employment of any person suffering from any infectious disease. In addition to the supervision of the local authority the Board of Health by means of a staff of veterinary and dairy inspectors maintain a direct control over both the registered premises and the manner in which the local authorities carry out their duties.

The improvement brought about by this Act in the whole of the great dairying industry and the milk traffic of the State has been very great within the last few years, and tuberculous cattle amongst dairy herds are becoming greatly lessened in numbers as more and more are slaughtered every year under the supervision of the veterinary inspectors. As a result of the demonstration given by those officers dairymen are beginning to grasp the fact that it is essentially the best policy for themselves to keep their herds free from this disease apart from any question of public health. Fines for any breach of the regulations can be inflicted not exceeding £20. Lacking though it is in many essentials, the Act has the great merit of being compulsory, and the adoption of its provisions is not left to the discretion of any body of self-inflated aldermen as is too often the case with measures of public health.

I am, Sir, yours faithfully,

MAX HENRY, M.R.C.V.S.,

Veterinary Inspector New South Wales Board of Health.

Candelo, New South Wales, June 13th, 1908.

THE TREATMENT OF MALIGNANT PUSTULE ("GRANO MALO").

To the Editor of THE LANCET.

SIR,—Bearing on an article that appeared in THE LANCET of Feb. 29th by Dr. J. S. Clarke and a note by Dr. John Cropper in THE LANCET of April 4th, the following data from the province of Buenos Aires may be interesting

Since the year 1903 I have treated 23 cases of *grano malo* (malignant pustule) with but two deaths, as follows:—

	1903.	1904.	1905.	1906.	1907.	1908.
January	0 ...	1 ...	0 ...	1 ...	...	... 1*
February... ...	4 ...	0 ...	0 ...	0 ...	...	... 1
March	4† ...	1 ...	0 ...	2 ...	...	... 1
April	1 ...	1 ...	0 ...	1 ...	...	... 1
May...	0 ...	1 ...	0 ...	1 ...	(Absent)	... 0
October	0 ...	0 ...	1 ...	0 ...	...	... 0

* Died. † 1 died.

The above table is suggestive. All the cases, with one exception—that of October, 1905—occur in the months of January, February, March, April, and May, which are the late summer and autumn months in the Argentine. The cases are also coincident with the outbreak of splenic fever in cattle and the appearance of the *mosca brava*.

The *mosca brava* is a small gadfly, to all appearance a house fly, but its proboscis terminates in a sharp point for puncturing purposes and not in a sucker. I believe the *mosca brava* to be the chief carrier of contagion amongst cattle and also from cattle to human beings. Cases due to the accidental handling of skins of diseased animals and to self-inflicted wounds during the process of skinning such animals are less common; that of October, 1905, and of January, 1906, belong to the latter category. With regard to the low mortality shown by the table, I believe it to be due to the "Mendez" serum, which I have used since 1903. My previous experience was that any advanced case of malignant pustule was doomed; I now consider that if the patient has a 24 hours' life he can be saved with a liberal administration of serum and thermo-cautery.

The *grano malo*, if due to instillation from the proboscis of an insect, starts with a central vesicle around the punctum. An itching sensation and not pain may be felt at the start; pain is not necessarily a symptom. The central vesicle becomes surrounded by successive rings of smaller vesicles like a mulberry, the more recent vesicles forming the perimetric circle, while the central vesicle becomes a black eschar, or the multiple small vesicles may fuse into one big vesicle half an inch in diameter with a central eschar; all this occurs within the first 36 hours. Meantime œdema around the pustule becomes pronounced and red lines of inflamed lymphatics are seen radiating to neighbouring glands which become enlarged and tender, and there is often a dark cyanotic colour seen in the depth of the œdematous tissue. If the insect has instilled the bacilli into the lymphatic spaces only, the case is not so grave as when the bacilli are instilled into small blood-vessels or obtain an entrance through newly made cuts and scratches. In other words, bacilli that obtain an entrance immediately through the blood vascular system are more deadly than if they enter through the more tardy lymph-vascular system. In the latter case the system is given time to throw up defence works and make itself immune, and in the milder forms I see no reason why a spontaneous cure could not be established; it depends on the dose instilled and where instilled.

A malignant pustule, as is well known, is generally found on an exposed part, and in my experience a pustule on a distal part, say the forearm or hand, is not so deadly as a pustule on the face or neck. The proximity of the latter to vital centres and the short circuit through the thoracic duct into the blood stream make the case far more grave. The oncome of high fever, restlessness and pain, enlarged central glands, occasional vomiting, and diarrhœa, especially of a dysenteric type, are grave signs, indications of a wholesale invasion and profound intoxication. It is rarely that marked albuminuria is present, and if the case be not treated, or if the patient comes too late for assistance, death occurs within the week from the first day of pustule. There are a few grave cases, generally where the bacillus has obtained an entrance through an incised wound into the blood-vascular system, that have a subnormal temperature, profound sweating, a flagging heart—typical cases of collapse.

Patients bear the cautery very well, the pustule and its surroundings seeming to have a lowered sensibility. The main colony—the chief source of infection—should be thoroughly cauterised and a double charge (6 cubic centimetres) of Mendez serum given. I consider that the secret of successful serum therapy is liberal and early dosing. Six hours after the first injection of serum I give another 6 cubic centimetres. Advanced cases of pustule on recovery often have extensive sloughing of tissue. With my present experience of *grano malo* I would as soon treat it without serum as I would diphtheria; not to use serum in either case is, to say the least, bordering on malpractice if serum be obtainable.

I am, Sir, yours faithfully,

Junin, Buenos Aires. M. AP IWAN.

*** It would have been well if our correspondent had also given statistics of the cases which he treated before 1903, in order that the mortality of his former method of treatment might have been compared with that following his present treatment. In the British Isles the death-rate from malignant anthrax is very small if the local sore be removed or destroyed. The serum treatment is practically never used in this country. In cases in which the bacillus anthracis attacks internal organs serum treatment would appear to be very suitable.—ED. L.

A CONTROVERSY ABOUT TEA.

To the Editor of THE LANCET.

SIR,—In your annotation on tea you mention that it has been repeatedly proved by chemical analysis that there is much more astringency in green tea than in black. I am aware this is the common opinion. On the other hand, it is asserted by some authorities, among whom were Mulder and Parkes and de Chaumont, that "there is rather more tannic acid and more thein and ætherial oil in green than in black tea." Mulder found 18 per cent. of tannin in the former and 13 per cent. in the latter. Ceylon tea contains less than other Indian teas.

"Black" tea gets its colour from the method of preparation, which is to leave the tea in heaps after it is plucked. A process of fermentation takes place which causes the original green to be changed to black. The leaves are then dried. The other variety is dried quickly after it is gathered and this preserves the colour in all *genuine* specimens of tea. It is known that much of the China tea exported is artificially coloured, or "faced." It was discovered some years ago that a filthy process was carried on by the Chinese. The colouring matter (which has in some cases been found to be indigo and Prussian blue) was smeared on the perspiring back of an "assistant," and the dried leaves were rubbed over him to give them the necessary colour. No doubt, as you remark in your article, all germs are destroyed by boiling; yet the idea of imbibing the secretions from the skin of an unhygienic Chinaman is repulsive enough to put one off drinking "green" tea. I hold no brief for any tea company and own no shares in any concern, but I am of the opinion that green China tea has a greater effect on the nervous system and is more likely to disturb it than black tea. The amount of tannin depends also on the size and age of the leaf. The best kind of tea, known as Orange Pekoe, is prepared from the young leaves at the top of the stem. It has more aroma and less astringency than Souchong or Congou, which are made from the larger leaves lower down. The *best* China tea (also collected from the top of the branch) is, I believe, never exported, but is preserved for the Emperor and highest officials. The adulterated article is sent abroad! This led to the decline of the sale of green tea, but more recently its trade has improved.—I am, Sir, yours faithfully,

H. W. G. MACLEOD, B.Sc., M.D. Edin.,
M.R.C.P. Lond., D.P.H.

Upper Wimpole-street, W., August 1st, 1908.

*** The adulteration referred to by our correspondent is now quite remote history. By the Sale of Food and Drugs Act of 1875 provision was made for the examination of tea by the Custom House at the principal places of importation, a measure which has since prevented effectually the sale of adulterated tea in the United Kingdom.—ED. L.

THE MEDICAL EDUCATION OF WOMEN IN EDINBURGH.

To the Editor of THE LANCET.

SIR,—It is a pity your correspondent "Gradatim" should seek to correct others before being herself sure of her facts. Two of the classes which she quotes as being "mixed" are "not mixed." Physiology, systematic course, and children's

diseases, clinical course, are now taught in separate classes to men and women. We are looking forward in the newly constituted school for women to providing the women with separate instruction in every subject.

I am, Sir, yours faithfully,

July 31st, 1908. EXTRA-MURAL LECTURER.

THE COVENTRY PRIVATE SLAUGHTER-HOUSES.

(FROM OUR SPECIAL SANITARY COMMISSIONER.)

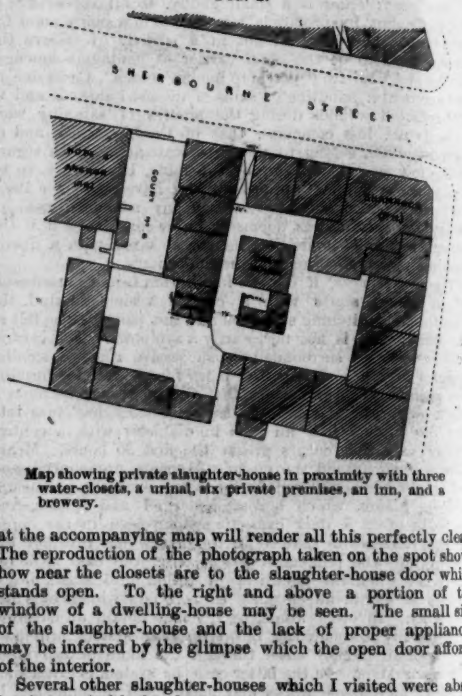
THE NEED AND THE DEMAND FOR A PUBLIC ABATTOIR.

THE erection of a public abattoir and meat market at Birmingham has stimulated the demand made for a similar institution in the neighbouring town of Coventry. This is all the more natural as some of the private slaughter-houses at Coventry are exceptionally bad. In the work recently published by Mr. C. Cash, B.A., and entitled "Our Slaughter-house System: a Plea for Reform," several illustrations are given of private slaughter-houses at Coventry; also the report of the medical officer of health for the year 1902 is quoted. This document accepts, as the basis of criticism, the rules which the Local Government Board advised the local authorities to enforce. Out of 50 private slaughter-houses then existing in Coventry only two fully conformed to this standard, though another eight, which failed to conform in some important particular, were otherwise in good order. These were therefore qualified as "insanitary slaughter-houses," while the remaining 40 were denounced as "very insanitary slaughter-houses." The latter are situated close to dwellings and ten are in the very centre of the town and amid thickly populated streets. Then 37 fasting pens are equally close to dwellings, while in six cases they formed part of the slaughter-house itself. In one case the stable, fasting pen, and slaughter-house consisted of one and the same shed.

These slaughter-houses, denounced officially in 1902, I have recently revisited and may at once say that no general and material alteration has been effected. In 1903 the medical officer of health again energetically protested in his official report against the existing state of things but declared that no real improvement could be effected. The only remedy was to close all private slaughter-houses and to replace them by a public abattoir. For instance, 29 private slaughter-houses are approached by a passage that is not more than four feet broad and in 12 of these cases the passage is only three feet broad. In 15 cases the entrance to the slaughter-houses forms the right of way to private dwelling-houses, and in 23 the slaughter-houses constitute the approaches to the back premises or courts of private dwellings. In two instances the doors of inhabited houses open into the narrow passage leading to slaughter-houses. The only way to provide proper approaches to these slaughter-houses would be to pull down a number of private dwellings. Obviously it would be much cheaper to close the slaughter-houses and to put an end to the killing of animals so near to inhabited premises. Thus, for instance, I visited recently a private slaughter-house situated in the centre of the town, where some attempts had been made to carry out improvements. These, however, served mainly to show that no real remedy was possible in such surroundings. The excellent Staffordshire blue brick has been employed with cement to make a watertight flooring. This also is not so slippery as the ordinary brick. But the fact that the flooring was good did not add to the room available for keeping the animals, and the fasting pen was a miserable and absolutely unsuitable wooden structure. As for the by-products, no proper systematic use was made of them. The blood, I was told, was boiled with pig's wash and given as food to the hogs. This most inadequate slaughter-house is at the back of a private dwelling. The very small yard of the slaughter-house is only separated from the still smaller back yard or court of the dwelling house by a paling made of corrugated iron. The cattle to be killed come in through a very narrow entrance that passes under another dwelling house. A back window, probably a bedroom window, opened, on the day of my visit, over a pile of offal which was thickly covered with flies. Close at hand there was a scullery and meals were prepared and cooked within a few feet of the spot where animals were slaughtered, cut open, and dressed for meat.

Then there is another slaughter-house situated in a central court behind a number of private dwellings and a public-house. Immediately opposite the entrance door of the slaughter-house, at a distance of only 7 feet 9 inches, there is a row of three water-closets and behind them a public urinal frequented by people from the public house. This urinal separates the closets from a brew-house, which is also in close proximity with the slaughter-house. This brew-house is still in use; beer is made here close to the public-house urinal, the three closets, and the slaughter-house. The passage from the street which leads to the slaughter-house, the three water-closets, the urinal, the brew-house, and the back of six other premises is only three feet wide. A glance

FIG. 1.



Map showing private slaughter-house in proximity with three water-closets, a urinal, six private premises, an inn, and a brewery.

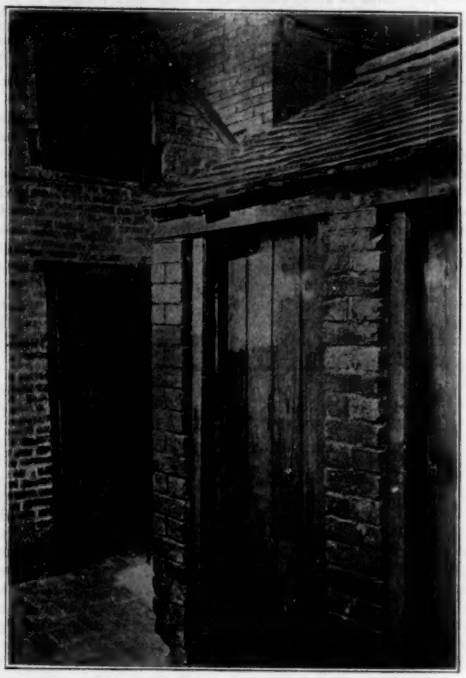
at the accompanying map will render all this perfectly clear. The reproduction of the photograph taken on the spot shows how near the closets are to the slaughter-house door which stands open. To the right and above a portion of the window of a dwelling-house may be seen. The small size of the slaughter-house and the lack of proper appliances may be inferred by the glimpse which the open door affords of the interior.

Several other slaughter-houses which I visited were absolutely unsuitable for the purpose. This was notably the case in and about a thoroughfare called New Buildings. Here I noted cobble pavement letting the blood, &c., contaminate the subsoil. There were cracks in the brick walls or flooring, and many rafters that could not be cleaned form places where dust and dirt accumulate, a veritable haven for germs and micro-organisms. And there were many flies to help to disseminate any evil. In Bull and Anchor Yard, off Bishop-street, I took a photograph which shows one of the old and picturesque houses of Coventry. (Fig. 3.) In this backyard, to the right and by the wheelbarrow, there is a small private slaughter-house. Much of the blood and some of the offal reach the loose pavement of this court, and naturally these petty little structures cannot possibly contain the ample facilities for cleanliness that are indispensable. Nor, of course, is there any place for cooling the meat, for cleaning out the intestines expeditiously and without creating a nuisance, for storing the blood that should be carefully collected, or for separating the carcass of an animal found to be diseased from the other and wholesome meat. The whole thing is primitive in the extreme and contrary to modern conceptions of the proper methods for the preparation of our meat-supply.

No one really attempts to defend these private slaughter-houses, only the local authorities are terribly afraid of incurring expense and increasing the rates. In June, 1899, the town clerk and the city engineer submitted a report on

the question of erecting a public abattoir, and in January, 1902, the medical officer of health brought forward a further scheme for a cattle market and public abattoir. Thereupon the sanitary committee proposed that the scheme should be altered so as to cost less, and, in a word, wanted something that in every sense would be smaller. The trouble is that not only the sanitary authorities but sometimes even the medical officers of health do not yet seem to have grasped the situation. They fail to understand that it is not a question of cost; it is a question of compulsory powers. Given the closure of all the private slaughter-houses, there is not the slightest need to apprehend any financial difficulty if sufficient money is spent. Lavish expenditure rather than economy then becomes the secret of success. It is the maximum of what is needed that should be supplied and not the minimum. This I say advisedly and with hundreds of examples to prove the same, for the maximum expenditure includes the utilisation of all the by-products, and it is the by-products that pay. In this respect at least the example of the Chicago stockyards provides a useful lesson. Then putting the money question aside, from the public health point of view it is precisely the treatment of the by-products that should be converted into a public service because these are dangerous industries, more dangerous than the killing of cattle and the dressing of meat. On the spacious premises that should surround an adequate public slaughter-hall there should be a series of separate buildings. In one of these all the calves', pigs', sheep's feet, and the calves' heads intended for food should be boiled before they are sent to the shops. It would be better also to have all sausages manufactured on the spot. Of course, the tripe must not be taken away but prepared in a building specially constructed and devised for that purpose. Other separate buildings are required for the salting and storage of the skins, for the cleaning and preparing of the intestines that are to be used for sausage skins and other industrial purposes, and yet another building for the utilisation of the blood. Then a quarantine lairage and a quarantine slaughter-shed and a destructor for condemned animals or portions of carcasses are required. Every one of these services, even the destruction of diseased meat, for it may be converted, and this without creating a nuisance, into valuable manure, forms a source of revenue. If enough money is spent to carry out a comprehensive scheme the income will pay the interest on the loan, satisfy all claims of the sinking fund, and show a good balance that can be employed, if needs be, for the reduction of taxation. But any tinkering with the matter may well lead to financial disaster.

FIG. 2.



Entrance of the slaughter-house at the open door to the left. To the front and right are two doors of the three water-closets which are shown in a row on the map. Above and to the right is a window of a dwelling-house.

FIG. 3.

Private slaughter-house in Bull and Anchor Yard. Wheelbarrow marks entrance.

Coventry, it appears, is in an exceptionally good position for the carrying out of a public abattoir scheme, as it need not have much trouble or seek special Parliamentary powers to close the private slaughter-houses. The medical officer of health in his report for 1903 says:—

In other towns, however, it does not always happen that they have such complete powers of closure of private slaughter-houses such as are

already obtained for this city. These powers are as follows. There are 17 old registered slaughter-houses, and four others which were included in the added area in 1899; where any of these are considered by your council (after an abattoir is erected) to be injurious or dangerous to the public health they may be compulsorily closed by compensating the owner or occupier. There are 25 old licensed slaughter-houses; these may be closed at any time after the erection of an abattoir at the wish of your council, and compensation in these cases is at the option of your council. There are six annually licensed slaughter-houses; the annual granting of these licences is in the discretion of your council.

In these circumstances there should be no difficulty in persuading all the butchers to abandon readily their private slaughter-houses. If the public abattoir is properly provided with modern machinery and contrivances the butchers will derive great benefits. They will not only do their work more quickly and better but they will be able to make a more profitable use of the by-products. If done on a sufficiently large and comprehensive scale every interest will be satisfied. But any attempt to economise, to tinker, and to compromise may well ruin the enterprise. That is why in Germany the numerous public abattoirs are so profitable and so successful and why the same cannot be said of the few public abattoirs which we have in England.

MANCHESTER.

(FROM OUR OWN CORRESPONDENT.)

Improvement in the Milk-supply.

FOR years past great and increasing efforts have been made to improve the quality of the Manchester milk-supply both as to ordinary cleanliness and to freedom from noxious germs. In both respects there has been, as the chairman of the sanitary committee says, immense improvement, and much of the credit is rightly given to Professor S. Delépine for the voluntary and sustained research which he has carried on "over and above that absolutely demanded for administrative purposes." From 1897 to 1906 he has tested the 4596 samples of cows' milk submitted to him by Dr. J. Niven for tubercle bacilli and made further investigations as to cleanliness and disease-producing power of the milk brought into the city. It comes in milk-cans holding on an average 17 gallons, so that each contains the milk from several cows. Each sample taken represents the contents of one can. It is collected by the inspectors in sterilised apparatus designed for the purpose by Professor Delépine in 1895, and special care is taken to avoid accidental contamination at the time of collection. The average yield of milk per cow throughout the year is stated to be two gallons per day, and the total quantity brought by rail or road amounts daily to 62,525 gallons. In this investigation Professor Delépine was assisted by Dr. F. J. H. Coutts, Dr. E. J. Sidebotham, and Dr. A. Sellers. The mode of examination was briefly as follows: 40 cubic centimetres of milk were centrifugalised and the bulk of the bacteria, cells, and extraneous matters separated as a dense sediment. A part of this was microscopically examined for tubercle bacilli. With another part a guinea-pig was inoculated subcutaneously and a duplicate test was made in each case. Very little discomfort was caused to the animals even when tuberculosis was brought on, for they were killed at the end of three or four weeks, at which time the disease was still localised, affecting especially certain glands resembling the lymphatic glands of scrofulous children. The inoculation test was much more trustworthy than the simple microscopical examination, which, if alone relied on, would have failed in more than 50 per cent. of the cases. It appears that of the 3650 samples tested by inoculation 340 (about 9·3 per cent.) contained virulent tubercle bacilli. Taking the average daily supply of milk during the decade as 50,000 gallons, it follows that the average daily amount of tuberculous milk brought into Manchester during the ten years was about 4660 gallons. Serious as this is, it would have been much worse but for the active measures taken by Dr. Niven and his assistants, who have had charge of the inspection of cows and cowsheds since 1896. Much improvement has now taken place, for while in 1897 and 1898 the number of tuberculous samples was 17·2 per cent., in 1906 it had fallen to 6·6 per cent. Professor Delépine gives a long catalogue of the foreign products—i.e., dirt—that were separated by centrifugalisation from each sample of milk:—

This sediment, when examined microscopically, was found to consist chiefly of cells derived from the internal parts of healthy or diseased udders; hairs and cells derived from the skin of the milker, or of the cow or other farm animals; wool, cotton, and other fibres from the clothing of the milkers, or from strainers and other articles; vegetable and mineral matter derived from food, dung, litter, or other kinds of dirt clinging to the skin of the cow or the hands of the milker, from the dust or splashings in the cowsheds, or dirt adhering to dairy utensils when these are not properly cleaned, from the water used for cleaning the cans and other dairy vessels; animalcules, moulds, algæ, bacteria derived from the food, litter, water (used to clean dairy vessels or other purposes), sometimes also from the hands and clothing of dirty milkers, and from cows or other farm animals, including cats and dogs; pathogenic organisms derived from diseased cows, dairy hands, polluted water, dust, &c.

The amount of dirt in the milk between the years 1896 and 1900, arriving daily in 40,000 gallons of milk, was about 106 pounds, or approximately one ton in 20 days. Not a pleasant state of things. But a great improvement has taken place. In 1906 the amount of slime or dirt in the same quantity of milk had come down to 79 pounds. From experiences in the laboratory it seems difficult to get milk containing less than seven grains of sediment per gallon, and if this amount be taken as the irreducible minimum the amount of dirt imported daily is still considerable. Before 1900 it amounted to 66 pounds daily, but in 1906 it had fallen to 39 pounds. Up to 1900 only 40 per cent. of the milk appeared to be clean, but in 1906 over 68 per cent. could be classed as clean milk. As regards the origin of the dirt, less will come from the farm than was the case in 1896. The dairies are cleaner, better looked after and inspected, and the farmers more alive to the importance of cleanliness than they were. But the state of the cow herself has to be looked after, while the milker may have filthy hands. Indeed, close supervision is needed if there are to be clean udders and clean hands. And there may be contamination at the railway stations and in the streets, where cans are opened and milk poured from one to another and splashed about without regard to the smoke from the engine or to the dust from the roadway. And in the milkseller's shop it is exposed to fresh sources of pollution. We are improving but have not yet reached perfection.

Conference on the Blind.

An interesting International Conference on the Blind has just been held in Manchester, and though the subjects discussed chiefly related to the social questions involved in their condition it was interesting to note the attention paid to the prevention of blindness by the proper care of the newly born. Perhaps the most important paper from this point of view was read by Miss Winifred Holt of New York. In 1906 a commission of inquiry appointed by the authorities of that State, and presided over by Dr. Lewis, a leading oculist, recommended that the eyes of newly born children should be washed with a 1 per cent. solution of nitrate of silver. Miss Holt said that by its use in hospitals and institutions ophthalmia neonatorum had been stamped out and that cases of preventable blindness were not more than half as numerous in the United States as in the United Kingdom. Her remarks no doubt referred especially to the class attended by midwives, but she advised that a solution of nitrate of silver or some other approved preparation should be supplied by health authorities in sealed phials, the use of which should be compulsory when any signs of inflammation arose, and immediate notification to the local health authority should be required. She suggested, also, that a woman inspector should visit maternity cases immediately after the registration of the birth; and that failure to notify ophthalmia or to neglect precautions should involve the loss of the midwife's certificate.

The late Dr. Henry Ashby.

The friends of the late Dr. Henry Ashby of Manchester will be interested to know that steps are being taken to commemorate in some suitable way the great services rendered by him to Manchester and the district. A committee has been formed to raise a fund with the object of carrying out this purpose. It is proposed that with the fund so raised a research scholarship shall be founded for the promotion of the study and treatment of the diseases of children, an especially appropriate memorial of the life-work of Dr. Ashby, whose labours for the welfare of children are so widely known throughout the world. Subscriptions to the fund may be forwarded direct to Lloyds Bank, King-street, Manchester ("Dr. Ashby Memorial Fund"), or to any of the following gentlemen who constitute a provisional committee: Ernest Agnew, Alexander Beith, E. M. Brockbank, M.D., George Comber, Stewart Garnett, Sydney

Hollins, H. R. Hutton, M.B., George H. Leigh, M.B., J. Dixon Mann, M.D., G. Norris Midwood, Sir Charles F. Schwann, Sir T. Thornhill Shann, and G. A. Wright, M.B., F.R.C.S. Mr. J. Howson Ray, F.R.C.S., 11, St. John-street, Manchester, and Mr. J. B. Close Brooks, Lloyds Bank, King-street, Manchester, are acting as honorary secretary and treasurer respectively.

August 4th.

SCOTLAND.

(FROM OUR OWN CORRESPONDENTS.)

The Local Government Board of Scotland and Pulmonary Phthisis.

THE Local Government Board of Scotland has issued to local authorities a paper on the administrative control of pulmonary phthisis in Scotland. Since the issue of the last circular in March, 1906, the following local authorities have extended the Infectious Disease (Notification) Act, 1889, to include pulmonary phthisis:—City of Edinburgh, Brechin, Penicuick (each permanently); the lower, middle, and upper wards of Lanarkshire (for five years); and Cupar, Bathgate, and Linlithgow districts (for one year, since extended another year). The Board in the present circular strongly urges the various local authorities to give effect to the following recommendations:—

1. An endeavour should be made to isolate and treat certain cases of the disease. The success of the scheme in Lanarkshire whereby spare wards in the infectious diseases hospitals in the county have been used for phthisical cases, should be carefully noted by those local authorities that have at times surplus accommodation in their infectious diseases hospitals. If the grounds of the hospital permit of it a pavilion might be erected, as in the case of Kirkcaldy and Partick. It is also for consideration whether the local authorities in a county or group of counties should not combine for the purpose of erecting a large sanatorium.

2. A dispensary for pulmonary phthisis should be provided in towns and other thickly populated localities where the number of phthisical patients is large.

3. Disinfection should be systematically carried out by the officers of the local authority.

4. A system of notification should be adopted without delay by every local authority. Finally, local authorities are reminded that all these efforts must be associated with indirect measures—the unremitting and systematic removal of nuisances, the prevention of overcrowding, stringent supervision of the meat and milk supply, systematic and detailed inspection of cows, cowsheds, and dairies. In other words, good sanitation and direct prevention should go hand-in-hand.

Alterations in Dates of Medical Examinations.

At a recent meeting of the Glasgow University Court the Senate submitted a report with regard to changes in the times of the examinations for degrees in medicine from June and December to April and October. It had been arranged that the winter examination should be held on March 17th and 18th, 1909, and that the clinical and other examinations should take place subsequently at dates to be arranged in due course. Under this new scheme the practical, clinical, and oral examinations would take place within a week, and it would have the advantage that external examiners would not be obliged to stay in the city two or three weeks as formerly.

Whiteford v. *Mackellar: a Case of Fees.*

A case which has caused much interest among the medical profession in the West of Scotland has just been decided in the Sheriff's Court at Greenock. The pursuer, a medical man, sought for recovery of fees amounting to £23 for professional attendance on defender's wife prior to and during her confinement in the spring of 1906. Defender made a counter claim for various items of expenses, amounting to £489. These expenses, he contended, were necessary as a result of alleged carelessness on the part of pursuer. On account of this the health of defender's wife suffered, and a consultant had to be called in whose fee amounted to £200. Amongst other expenses claimed by defender was £40 for three months' residence at the seaside during his wife's convalescence. He based his claim principally on the alleged want of proper antiseptic precautions at the birth of the child. The sheriff in his finding stated that it was the usual and ordinary practice in the medical profession to sterilise the instruments used at a confinement either by boiling or by steeping in a solution of carbolic acid and hot water or by both methods; that the pursuer did not sterilise the instruments used by him at said confinement by any of these methods; on the other hand, the defender did not prove that the illness from which his wife suffered after her confinement was caused by the pursuer's failure to sterilise his instruments, or by any negligence, want of care, or unskilfulness on his part. He found in law that it was an implied condition of the pursuer's contract with the defender that the pursuer should sterilise his instruments in accordance with the usual and ordinary practice of the medical profession, and that the pursuer, being in breach of his contract with the defender, was not entitled to sue for payment of his services; and that the defender having failed to prove that his wife's illness was due to negligence, want of care, or unskilfulness on the part of the pursuer, was not entitled to any part of his counter-claims. It is understood that the case is the subject of appeal in the court of session by the defendant.

Fatal Accident to a Medical Man.

On Wednesday evening, July 29th, an accident, unfortunately followed by fatal results, took place at Balshandie, the camping place of the 4th (City of Dundee) Battalion, Royal Highlanders. Surgeon-Major George Halley, who held the rank of major in the Field Ambulance Medical Corps attached to the Territorial District, had been serving in that capacity at the camp during the last fortnight. On Wednesday evening, when riding near Lundie Smithy, his horse became restive and he was thrown, alighting with great violence and being rendered unconscious. He was taken back to the camp and attended to by the other members of the medical corps. His condition did not improve, however, and the Dundee ambulance was sent for, which removed him to his home at Airlie-place. On Thursday morning the patient was still unconscious but a slight improvement in his condition was manifest. This improvement, however, was not maintained and Dr. Halley died at 5.30 P.M. on Thursday without having regained consciousness. Dr. Halley was educated at Clifton College and the University of Edinburgh and graduated in medicine in 1892. After serving as house surgeon at the Dundee Royal Infirmary he was appointed successively dispensary surgeon, assistant surgeon, and full surgeon to the institution. He was one of the two medical officers to the Victoria Hospital appointed at the foundation. He was consulting medical officer and examiner for the Bannatyne Home. For seven or eight years he acted as secretary of the Forfarshire Medical Association and was leader of the ambulance movement in the Dundee district. Dr. Halley leaves a widow and two children, for whom very sincere sympathy will be felt in their great and sudden bereavement.

Medical Officership of Braemar.

A meeting of the Crathie and Braemar parish council was held in the Invercauld Arms Hotel, Braemar, on July 30th. Mr. Andrew Smith, factor, Invercauld, presided, and all the members of the council were present. The chief business before the meeting was to receive the report of the subcommittee appointed some time ago in connexion with the appointment of a medical officer for the parish. The committee submitted its report, which was as follows:—

The committee beg to report that they have been making inquiry with a view to recommending a suitable medical man for appointment as medical officer. In the course of their inquiry they discovered that the appointment has been placed on the "black list" by the British Medical Association as well as by the Scottish Poor-law Medical Officers' Association. The opposition of the latter association is not so important, but they find that the opposition of the British Medical Association prevents all inquirers from accepting the appointment. The committee are satisfied that if the opposition of these associations can be overcome a satisfactory appointment could easily be made. They recommend that other two members of the council be added to the committee or any five members the council may appoint, and that it be remitted to them to approach these associations with a view to having their ban withdrawn, and with power in the event of the associations declining to withdraw it to take such steps and action as they may consider necessary to interdict the two associations from spreading unfair and misleading statements with regard to the appointment, and to recover damages from them for the injuries already sustained by the parish. They beg also to submit the account of Dr. Wells's expenses, and instruct the clerk to remit the amount to Dr. Wells, as they undertook to pay his expenses if he came through for a personal interview, with a view to his appointment as medical officer. Dr. Wells found that he could not accept the appointment without breaking faith as a member of the British Medical Association, they having their ban on the appointment.

The committee's report was adopted by 5 votes against 3.

August 4th.

THE WATER-SUPPLY OF DEVONPORT. — The Devonport water committee has decided to construct a new storage reservoir at Crownhill. It will have a capacity of 20,000,000 gallons; the estimated cost is £31,000.

IRELAND.

(FROM OUR OWN CORRESPONDENTS.)

Richmond Lunatic Asylum.

AT the monthly meeting of the joint committee of this asylum Mr. R. Jones, the chairman, paid a warm tribute to the memory of the late Sir John Banks who for many years past and up to the time of his death had been drawing a pension as visiting physician to that institution, to which he had rendered many important services. He moved a vote of condolence with the family of the deceased gentleman in their bereavement. The motion was seconded by Mr. John R. Garstin and adopted unanimously. After the election of the chairmen of the several subcommittees an important discussion took place in connexion with the question of direct labour employment in the alterations and additions to the institution, on which it is proposed to spend £35,000. It was suggested on one side that by direct labour the necessity for employing a quantity surveyor would be obviated. The chairman held the view that direct labour would prove much more expensive than contract. They had not the necessary plant of their own and an objection to Dublin contractors amounted to a general reflection on the workmen of the city. A proposition in favour of direct labour was defeated by 16 votes to 13.

An Unsuccessful Euphemism.

A suit of some importance against an insurance company was defended successfully before the Recorder of Dublin on July 23rd. The defendant company had refused to pay a sum of £4 17*s.* 6*d.*, the proportion claimed to be due to the surviving father in respect to a policy of £19 10*s.* on the life of his daughter who had died on July 8th, aged 15 years. The policy had been taken out in April last. A proposal had been signed by the father which stated that the daughter was then in good health and had never been seriously ill. About eight days after the issue of the policy the company sent to the plaintiff's house to inquire about the girl and it received the information that she was in the country with relatives. Alderman Farrell gave evidence on the part of the defendant company, and stated that when insured parties were said by their friends and relatives to be absent in the country the true meaning generally was that they were in the Hospice for the Dying or the Hospital for Incurables. With regard to the case now contested, he had found that the plaintiff's daughter had been taken to the Hospice for the Dying on April 23rd, where she died on July 8th. His lordship dismissed the action, as the plaintiff had made a statement purporting to be true which subsequent events proved to be not true. He also took the opportunity of saying that he did not approve of the custom of insuring the lives of young children.

A Verdict for a Medical Man.

Mr. Peter O'Dwyer, dispensary medical officer to the Ennistymon board of guardians, was recently awarded £16 16*s.* at quarter sessions by his honour Judge Bodkin for professional services whilst acting as substitute at the workhouse. The decree was executed by a bailiff who seized a horse and some pigs at the workhouse in satisfaction. The proceedings are likely to have a salutary effect upon the boards of guardians in Clare in their dealings with "dispensary doctors."

Campaign against Tuberculosis.

An Ulster Member of Parliament, Mr. C. C. Craig, has written to the Belfast papers to the effect that—

> The question [i.e., the Prevention of Tuberculosis (Ireland) Bill] is to a large extent a technical one, and the various medical bodies and health authorities have already spoken, but I want to hear the opinions, ideas, and suggestions of the public which is going to be affected by this Bill. My own ideas are in favour of educational measures of fighting the disease rather than the harsher methods set out in the Bill, but my object in writing is to obtain, if possible, a general expression of opinion on this highly important subject, so that when the Bill is in its committee stage we Ulster representatives may be in possession of as much information on the subject as possible.

This letter has evoked an immediate reply from his own constituency, for last week at the weekly meeting of the Lisburn guardians one of the most popular gentleman in the district, Mr. H. M. Barbour, who has been prominently identified with the Irish movements promoted with the object of calling public attention to the terrible scourge of consumption, moved the following proposition, which, after being seconded by another member of the board of guardians, was passed unanimously:—

> That this meeting of the Guardians of Lisburn Union, which comprises a large area of country in the counties of Antrim and Down and the town of Lisburn, approve of the Tuberculosis Bill now before Parliament, and call on our local Members to support the Bill; and further, to do all they can to help to combat the ravages of this disease which is yearly levying such a toll on the lives of the people.

Mr. Barbour, who is a member of the Department of Agriculture and Technical Instruction of Ireland, has done an immense deal to forward the campaign against consumption in Ireland. He personally bore the expense of the visit of the Tuberculosis Exhibition to the Lisburn district.—A meeting of the Ulster Medical Society was held in Belfast on July 23rd "to consider the Prevention of Tuberculosis (Ireland) Bill, and to take such action thereupon as may be considered desirable." The president, Dr. John M'Caw, occupied the chair, and there was a large attendance. After a full and exhaustive discussion the following proposition, moved by Sir John Byers and seconded by Dr. Alexander Dempsey, was unanimously passed:—

> That the members of the Ulster Medical Society approve of the compulsory notification of tuberculosis, and that a special committee be appointed to consider the Tuberculosis Prevention (Ireland) Bill and to suggest any alterations or amendments to its clauses.

—The County Fermanagh branch of the Irish Medical Association has recently discussed the Bill and has moved a series of resolutions embodying its views thereon. One of these ran as follows:—

> That in the opinion of the members of this branch of the Irish Medical Association the proposed Bill is very inadequate for the occasion and will not attain the object desired unless the measures to meet the consequences of compulsory notification are also made compulsory. Without such compulsory powers any legislation to prevent tuberculosis will be brought into ridicule and contempt and be foredoomed to failure.
>
> August 5th.

PARIS.

(FROM OUR OWN CORRESPONDENT.)

French Association for the Advancement of Science.

THIS Association will hold its thirty-seventh annual congress at Clermont-Ferrand between August 3rd and 9th under the presidency of M. Appell, Dean of the Paris Faculty of Sciences. M. Landouzy, Dean of the Faculty of Medicine, will be vice-president. The Section of Medical Sciences will be under the presidency of M. Gaucher, a clinical professor in the Paris Faculty. The following subjects are set down for discussion: The Therapeutic Action of Radium on Neoplasms, Mercurial Poisoning of Therapeutic Origin, and the Treatment of Nephritis in Syphilitics. The Section of Electrical Medicine will be presided over by M. Barjon, physician of the Lyons hospitals, and the programme of the section will include: The Action of Roentgen Rays on the Genital Glands; Sinusoidal Currents in Electrotherapy; Radiographic Errors and the Means of Avoiding them; Atrophies of Articular Origin considered from the point of view of Industrial Accidents; and the Instruments and Methods Employed in Measuring High-Frequency Currents. Sir William Ramsay has accepted an invitation to open a discussion upon the recently discovered gases of the atmosphere and their relations to radium. The Association will present him with its grand gold medal.[1] On the evening of August 6th the town of Royat will entertain the members of the congress at a large fête.

The Adulteration of Drugs.

The Departmental Commission on Public Health has approved the Bill for the suppression of fraud in connexion with drugs and similar commodities. This Bill, amongst other provisions, lays down that at least once a year an inspection shall be made of all pharmaceutical laboratories, dispensaries kept by medical and veterinary practitioners, chemists' and druggists', herbalists', and grocers' shops, hairdressers' and perfumiers' establishments, stores of natural mineral waters, factories and stores of artificial mineral waters, and all other places where medicinal or sanitary products are made, stored, or exposed for sale. Pharmaceutical chemists, druggists, or vendors of such

[1] This presentation was made at the opening meeting of the Congress.—Ed. L.

products will be liable to produce the drugs and compounds in their shops, laboratories, and branch establishments. The inspection will be exclusively in the hands of qualified pharmacists.

A New Research on Cancer.

At the Biological Society on July 25th a very interesting series of researches was communicated by Dr. Doyen. He recalled first the importance of Professor Metchnikoff's discovery of the rôle of the phagocytic cells in defending the organism against infective bacteria. Whilst studying in a comparative manner the phagocytosis of the micro-organism which he has discovered in cancer and the staining of sections of cancerous tumours by a new method of silver impregnation, Dr. Doyen observed that the bacteria in question not only penetrate into the substance of the phagocytic cells but also into their nuclei, which digest them rapidly. On the other hand, in sections treated by the silver process the bacterium is found in the nuclei of the cancer cells. The cells under this irritation develop in an abnormal manner and destroy the healthy tissues, which they replace. In this destructive action on the tissues they seem to act like true phagocytes. In this manner Metchnikoff's discovery affords a clue, Dr. Doyen thinks, to a series of pathological phenomena which hitherto have been inexplicable. The parasitism of cancerous cells and their multiplication would then be nothing but a defensive reaction against the pathogenic micro-organism.

Cocaine Anæsthesia in the Treatment of Fractures.

M. Quénu has used local cocaine anæsthesia for this purpose on several occasions. At the Chirurgical Society on July 22nd he described several cases in point, including one of a young man, 25 years of age, who had sustained a Dupuytren's fracture. M. Quénu injected three centigrammes of cocaine, two centigrammes at the level of the malleoli and one centigramme at the seat of the fracture. Three or four minutes later he reduced the fracture and put the limb up in plaster without the patient feeling any pain. In 14 other cases of various fractures he employed the same method and in the whole series of 15 he only had one failure on account of too little of the anæsthetic having been used. M. Quénu is accordingly of the opinion that the method deserves recommendation.

Medical Men and the Income-tax.

A group of medical men in Parliament has met at the Chamber on July 9th under the presidency of Senator Labbé and considered the consequences to the medical profession of the income-tax. After a prolonged discussion, in the course of which delegates from the medical societies of France and of the Seine were heard, it was decided to support amendments demanding amongst other things that returns for the tax upon income derived from the practice of the liberal professions shall be made annually after the deduction of professional expenses and that in case of any dispute either as to the amount declared or as to the tax itself it shall be incumbent upon the collector to prove that an incorrect return has been made.

August 3rd.

BERLIN.

(FROM OUR OWN CORRESPONDENT.)

The Treatment of Prostatic Enlargement by Roentgen Rays.

Professor Caspar has lately read an interesting paper on the treatment of prostatic enlargement by Roentgen rays. He said that the power of the x rays to produce a decrease of glandular substance in the spleen and elsewhere suggested the trial of the treatment in prostatic enlargement. Professor Caspar has applied x rays in five cases where two of the patients had occasional complete retention, two could discharge the urine rather freely but showed a tendency to relapse into acute retention, while the fifth patient suffered from a condition of tenesmus, but without residual urine, and due to irritation of the bladder. The result of the Roentgen treatment was that in neither of the cases of complete retention was any change effected; the cases of incomplete retention seemed to improve at first, but on longer observation the improvement proved to be temporary only; while the fifth case was not influenced at all. The result of the Roentgen treatment was thus quite a negative one. The cause of this failure is, according to Professor Caspar, that the enlarged prostate consists not of glandular but of fibro-myomatous tissue, and for this reason the castration and the excision of the vas deferens recommended a few years ago are also of no use. He concludes that suprapubic prostatectomy is the proper treatment.

Operations without the Consent of the Patients.

A verdict lately given by the Imperial Court of Leipsic, the highest judicatory authority of Germany, is of great importance to the medical profession. A boy suffering from congenital dislocation of the hip had been brought by his father to the private clinic of a well-known professor of orthopædic surgery at Heidelberg. It was understood that the case should be treated by orthopædic procedure, but the professor without giving previous notice to the father performed an operation. The father accordingly brought an action for damages against the professor, demanding compensation for the pain caused by the operation and an annuity for the patient whose health was alleged to have been prejudiced. The Heidelberg court gave a verdict against the plaintiff but on appeal the Imperial Court of Leipsic granted to plaintiff a sum of 5000 marks (£250) for the pain, declining, however, to grant any annuity. The court held that the operation had been performed according to the principles of medical science and that although no remarkable improvement had been obtained the state of the patient was in no way worse than before the operation. The court also held that the operator had exceeded the discretion that should be allowed to medical men in operating without express consent as there was no emergency in the case. This decision has caused a certain stir, as hitherto the Imperial Court had granted damages only where negligence could be proved.

The Consumption of Spirits in Berlin.

According to statistics recently published by Dr. Hirschfeld there are in Berlin 13,193 restaurants, bars, and other public houses, or one for each 157 inhabitants. In these public-houses 438,939,582 litres of beer, 24,704,525 litres of brandy, and 19,956,062 litres of wine were consumed within a year, and over 200,000,000 of marks were received in payment, 153·5 millions marks being spent on beer, 26·7 millions on brandy, and 25·5 millions on wine. This means an annual consumption of 215 litres of beer, = 78 marks and 18 pfennigs, 12·1 litres of brandy, = 13 marks and 14 pfennigs, and 9·6 litres of wine, = 9 marks 52 pfennigs, for each inhabitant, women and children included; the average quantity of alcoholic liquors per annum is thus about 236·5 litres, and the sum spent for them 100 marks and 85 pfennigs for each inhabitant. As the average income is 683 marks 20 pfennigs for each Berliner, the seventh part of the income is thus spent on alcoholic liquors. The sequel is that, for instance, in the Charlottenburg Municipal Hospital in 1904 20 per cent., and in 1906 30 per cent., of the patients showed symptoms of alcoholism, and of 1419 men received in the Berlin Municipal Lunatic Asylum at Dalldorf 540 were alcoholics. The late Dr. Baer, medical officer to the Ploetzensee prison, found that of 3227 prisoners more than one-third were alcoholics. This is the present position, although the temperance and abstinence movement has made a marked progress throughout Germany.

August 3rd.

ITALY.

(FROM OUR OWN CORRESPONDENT.)

Autumn in Midsummer.

NOVEMBER in July! Such has been our portion during the month just closed. Grey skies; showers torrential if intermittent; cold, necessitating a return to winter raiment,—this autumnal *intermezzo* in midsummer began three weeks ago with a *nubifragio* or waterspout which, exploding over Tuscany, descended on city, suburb, and *campagna* in a mitrailleuse of hail, to the destruction of vineyard, olive-grove, and field crop, giving the country the appearance of having been "shelled" from one of the "airy navies" anticipated as a force in international warfare. Florence was exposed to the full violence of the "cannonade," insomuch that there is scarcely a verandah, greenhouse, or skylight that has not been smashed to splinters, to say nothing of the cases of wounds, contused, lacerated, or incised, that have thronged the out-patient department of the hospitals. The hailstones,

seldom smaller than pigeon's eggs, sometimes as large as apricots, proved a very formidable artillery—a mild foretaste of what may be expected from the airship when it has been made—as is now well-nigh foreseen—a vehicle for ordnance or aerial battery. From the Alta Italia, as well as from the central provinces, the same experience is reported—from Cuneo in Piedmont, from Liguria, from Lombardy, from the Lago Maggiore, from Venice, from Padua, from Verona, the tale is told, with monotonous sameness, of whirlwinds, waterspouts, and hailstorms alternating with a tropical downpour, involving agriculture and the population that lives by it in dire disaster. Floods, too, have devastated the low-lying country from the rainfall and the melting snow—a visitation hitherto experienced, or expected, only in the autumn, and all due (say the meteorologists) "to the fusion of two cyclones, the one on the English Channel, the other on the Gulf of Genoa." On a minor, very minor, scale there were the like phenomena in the summers of 1906 and 1900, when, coincident with a rapid fall of the thermometer, there were hailstorms and cataracts of rain destructive of field and garden produce, the forerunner of loss and misery to the rural and even urban population. Periodicity in cyclonic disturbance is now so far recognised as to stimulate inquiry into its causation—in Italy particularly, where changes, artificial as well as natural, in the earth's crust are extensive, as well as intensive, enough to prompt speculation as to remedial measures, reafforestation of the denuded hill sides and mountain ranges at last receiving the attention too long withheld.

Two Deaths.

At Milan on July 17th died Dr. Giuseppe Pessina, a physician and pharmacologist of distinction, who directed the "Farmacie degli Istituti Ospitalieri," besides presiding over the "Associazione dei Farmacisti d'Italia," and holding a place on the Superior Council of Public Health. A Milanese by birth he was well known throughout the medical schools of Italy, particularly in that of Florence, where he was honorary fellow of the "Associazione Chimico-farmaceutica." He edited the "Bolletino Farmaceutico," to which he was a frequent and effective contributor, and when the great pharmaceutical congress was held two years ago at Milan his organising powers conduced not a little to its success, while his discourse inaugurating its sittings is remembered as one of the most brilliant and illuminating in the series. He died comparatively young. Another loss to the profession is that on July 18th of Dr. Vittorio Bosi, superintendent of the "Spedale degli Innocenti," of the "Orfanotrofio del Bigullo," of the "Istituto della SS. Annunziata," and of many other institutions, medical and hygienic, in Florence and its neighbourhood. These posts he held with much acceptance, particularly that of the "Innocenti" whose interests he safeguarded and promoted for 20 years. He was also physician to that peculiarly Tuscan fraternity, the "Misericordia," which undertook the arrangements for his funeral. This, which was a public one, attended by the heads of the profession and many leading citizens, attested the high esteem in which he was held and the sense of loss occasioned by his death.

The "Riposo Settimanale" in the Industries.

This great hygienic measure—the weekly day of rest—inspired, if not modelled, on British lines by the "Lega Industriale" (Industrial League), is so far on the way to become an "institution" as shortly to leave the hands of the "Consiglio dei Ministri," after which it will receive the signature of the King, well known to be interested in it deeply. Not "Sabbatarian" in the ecclesiastical sense, it is expected to work a notable change for the better in the lot and in the lives of industrial and agricultural "hands" who have hitherto known but the irregularly recurring respite from work coincident with the "feste" of the Church.

August 1st.

NOTES FROM INDIA.

(FROM OUR OWN CORRESPONDENTS.)

Plague Inoculation at Bangalore.

THE total number of people inoculated with the new plague prophylactic in the civil and military station at Bangalore now exceeds 30,000. The inoculation campaign has been an unqualified success, thanks principally to the personal interest taken in the matter by the British Resident Mr. P. L. Moore, Mr. Abdul Rahman, and the large number of Indian gentlemen who have put themselves to much expense in arranging for private inoculation programmes. The plague staff has had, however, a particularly trying time in carrying out the work.

New Zenana Dispensary in Kashmir.

The Zenana Medical Mission, Ranawari branch, Srinagar, has been granted a plot of land in Srinagar to build a zenana dispensary and schoolroom. A sum of about £3000 is needed for the purpose and Miss Elizabeth Neuman, the superintendent, writes to say that the smallest contributions will be gratefully received. The mission gets no grants whatever and its work and buildings are entirely supported by voluntary contributions.

Apology for Libel on a Medical Officer.

The *Madras Standard* has published the following apology to Captain Kemp, I.M.S.:—

We desire to offer an apology to Captain Kemp of the Indian Medical Service for the serious reflection on his conduct suggested by the words "nearly murdering an Indian boy for crying 'Bande Mataram'" contained in Mr. Nevinson's letter to the *Manchester Guardian* and republished by us in our issue of the 7th January last. The courts decided that Captain Kemp only assaulted the youth in Cocanada under sudden and grave provocation and that it was difficult for him to act otherwise in the circumstances that were present or to seek the protection which the law could offer. We desire therefore to entirely dissociate ourselves from the reflection above referred to.

Lahore Medical College.

The Punjab Government has decided to effect certain alterations in the Lahore Medical College in order to meet the growing needs of the College in the matter of laboratories and class-rooms, and a proposal to increase the teaching staff of the College is also before the Government of the Punjab. The extension, if carried out, will probably involve the complete separation of the medical school from the college and the transfer of the former to a new site. In any case it will be necessary to remove the laboratory of the chemical examiner from the Medical College.

Eyesight of Soldiers' Children

Major F. Kiddle, R.A.M.C., a military specialist in ophthalmology, has been instructed to visit the stations of Secunderabad, Bangalore, and Wellington as soon as the monsoon has broken and to examine the eyesight of the children of British soldiers at these places. In those instances where glasses are required the necessary representations and information are to be afforded to the parents concerned. He is also to report on the lighting of each school and the type of desks and seats used.

Plague in the Central Provinces.

During the week the Central Provinces, including Berar, seem to have been absolutely clear of plague, not a single case being recorded. This extinction, for the time at any rate, of the disease over a country where at different periods of the last decade it has raged so severely has been attained by a gradual process of diminution which has been going on throughout the current year. In February, the last month for which complete vital statistics are available, the deaths were 894, as against a mortality of over 7500 in February, 1907, and it is highly satisfactory to see that it has since been falling to vanishing point just through that period of the year when according to past experience it might have been expected to mount to its annual maximum.

Tuberculosis amongst Indians.

In the Bombay Presidency there were 60,615 deaths due to phthisis and allied diseases during the year 1906-07. In the Central Provinces the figures have doubled during the last few years, those of the last official year being 16,609. In Madras the ravages seem to be even worse. In 1902 the figure stood at 5042; in 1906 it was recorded at 23,378. Five years ago 584 persons succumbed to affections of the lungs in Eastern Bengal and Assam. During the last year the number was quadrupled. In Lower Bengal the figures have risen from 5666 to 12,825 during this period. In the United Provinces diseases of the lungs carried off over 20,000 victims in 1906, the Punjab over 57,000, and in the Frontier Province 1383. There can be little doubt that considerable reduction in the mortality under this head could be effected with proper scientific treatment and much needless suffering and serious risk of infection could be avoided Prompted

by these considerations, Mr. Behramji M. Malabri, a wealthy Indian gentleman, has sent out an appeal for funds to enable him to build a home for phthisical Indians in a pine forest at Dharampur or Solan, near Simla. Negotiations for the purchase or perpetual lease of about 50 acres of land, covered with pine trees, are in progress. Two sites have been selected, both of which command the requisite altitude of between 4000 and 5000 feet above the sea level with a perennial supply of pure water. On either of them a number of cottages can be erected in the open fields. The promoters of the Consumptives' Homes Society have appealed to their countrymen of all ranks and classes for help to carry out their intentions.

The Causes of Plague.

Captain V. B. Nesfield, I.M.S., commenting in the Indian press on the falling off of plague in the Central Provinces, thinks it is only too true that the knowledge gained by bacteriology has done very little to stamp out plague in India, though it has been of great service in other countries. Indeed, bacteriological knowledge regarding plague in India has alone brought about the expenditure of a great deal of money in the provision of antiseptics and so on. The diminishing virulence of plague during the last spring months has proceeded hand in hand with the falling off of food supplies. In villages and country districts the virulence of plague has markedly decreased in the tracts affected by famine, which is only what is to be expected by working on Captain Nesfield's previously expressed theory that the outbreak of plague in the winter months is due to the storing of a great part of the autumn harvest in the dwelling houses, coupled with the scarcity of food for rats in the fields. The natural consequence resulting is a great exodus of rats from the fields into the villages. There are three conditions during this harvest to bring about the recrudescence of plague: (1) the manner of drying the grain; (2) the method of storing it; and (3) the condition of the dwelling houses and the custom of sleeping indoors in the winter with every door closed. As to (1) the method of drying grain. During the day the grain is spread out in the sun on *charpays* or on prepared spaces on the ground. At night it is collected, placed in baskets or *ghurrahs*, and taken indoors for protection. This continues for from two to six weeks or longer, until the grain is quite dry. It is then frequently stored for the use of the household in earthen vessels unprotected from the ravages of rats, though large unbaked mud receptacles closed at the top and with a hole at the bottom shut with a plug are sometimes used. The daily dole is obtained by removing the plug and permitting the grain to pour out like fluid from a barrel. This is an excellent method. During the drying rats have free access to the grain and hence come in large numbers; later, when dry, and even if securely stored, they still pick up a living from scraps of food left over. Natives' houses (except in certain districts which also are plague-free—e.g., Purneah) are built without windows or any vent for air or light, so much so that it is pitch dark inside when the door is closed. Here, then, are the ideal conditions for the outbreak of a plague epidemic—people sleeping in a vitiated atmosphere in closely sealed up houses infested with rats. The rats themselves from overcrowding and close contiguity become more liable to epidemic disease, and it is probable that the plague epidemic among rats is due to the disease which is present in some of them in a dormant and non-virulent form acquiring vigour on account of the unhealthy state of the hosts. Famine has killed off many rats and the scarcity of food in the villages has failed to attract the remnant. It is probably on this account that plague has been so mild this spring. It is very probable that after a short time rat-killing and disinfecting campaigns will be discontinued, as the resulting benefits are so temporary, and even inoculation will fall into disfavour. It may then be possible to divert some of the energies to teaching villagers the importance of not storing grain in their dwelling houses and the importance of making windows in the walls of their houses. Captain Nesfield believes that these, and only these, two things will stamp plague out of India. It is a significant fact that the houses in the Purneah district are made of bamboo and are well ventilated, each with its own granary, and that though plague is frequently imported it never spreads and always quickly dies out.

July 5th.

Obituary.

SIR THOMAS STEVENSON, M.D. LOND., F.R.C.P. LOND., M.R.C.S. ENG.,

SENIOR SCIENTIFIC ANALYST TO THE HOME OFFICE.

THE notice of the death of Sir Thomas Stevenson, which occurred on July 27th, was received with profound regret and sorrow by the members of the medical profession. For many years the deceased had been the acknowledged representative and head of the science of medical jurisprudence in this country, whilst his reputation abroad was equalled, if at all, by few and excelled by none. Stevenson has left his "footprints on the sands of time" and his name will go down to posterity with those of Orfila, Casper, Tardieu, and Brouardel.

Born at Rainton, in Yorkshire, a little more than 70 years ago, he was privately educated. His professional training took place at Guy's Hospital, with which institution he was connected until his demise. He graduated at the University of London, taking highest honours, and when but 32 years of age was appointed lecturer on chemistry at Guy's Hospital Medical School. Eight years later he was elected lecturer on forensic medicine at that school and from that time his vocation may be said to have become fixed, for shortly afterwards he was attached to the Home Office, where he was for 27 years the senior scientific analyst. He devoted himself chiefly to toxicological study and investigation, and it was in this branch of medical jurisprudence that ultimately he came to have a world-wide renown. He had all the requisite characteristics of a successful scientific inquirer, and (which may be considered a by no means common association) he was a born scientific witness. The application of medical knowledge to the administration of justice found in him a fitting exponent. He was a man of untiring energy and prosecuted his researches with scrupulous exactitude. His observations were minute and methodical. His inferences from ascertained facts were drawn with logical precision. The "unknown quantity" was never allowed to enter into his calculations, and in this lay one of his strongest claims to consideration and respect. It may be truly said that he was impeccable as a medical jurist. Cool, calm, and collected in the witness-box, his evidence carried conviction to the minds of jurors and inspired opposing counsel with a wholesome dread of challenging his testimony. Whether deposing to facts in a case of water analysis in which nothing more than the pecuniary interests of rival litigants were involved, or speaking words on which the liberty and even the life of the subject were at stake, he kept the even tenor of his way, unshaken and unshakeable. There was never the slightest difficulty even to the uninitiated in scientific discussions to gather the true import of Stevenson's evidence. Within the last 30 years there has scarcely been a case of toxicological interest heard in our criminal courts in which his influence has not been invoked directly or indirectly.

Where everything has been so excellent it is difficult to say on what particular investigations his fame rests. It may be permitted, however, to refer to a few of the *causes célèbres* in which he has played the chief part. In 1882 Dr. Lamson, a medical practitioner, was indicted for the murder of his brother-in-law, Percy Malcolm John. The victim had symptoms highly suggestive but not conclusive of poisoning by aconitine—an alkaloid for which there were no positive chemical tests. Upon Dr. Stevenson—the Crown had not yet conferred upon him its signal mark of favour—devolved the task of the analysis and physiological research required to bring guilt home to the prisoner. By analysis he could only ascertain that a substance of an alkaloidal nature was present in the vomit, urine, and gastro-intestinal contents. By experiments on the human subject and on lower animals he obtained proof that the substance was aconitine. The brilliancy and accuracy of his work in this instance have probably never been equalled in the annals of forensic medicine. In many of its features it recalls the efforts and achievements of Tardieu and Roussin, who investigated the case in which Dr. de la Pommerais was charged with murdering a woman by administering digitalin, but even Brouardel, their compatriot, was constrained to pass a qualified judgment on the medical evidence. Stevenson's results, on the other hand, have been accepted by all without

reserve. Called as the last witness at the trial of Mrs. Maybrick, Stevenson's averment, "I can have no doubt that the cause of death was irritant poisoning, and I found the irritant poison," had doubtless more influence with judge and jury than the alleged motive and acts of the accused. True, his conclusions for once were resolutely challenged by witnesses for the defence, but to an impartial observer they stand irrefuted. His work in the investigation of poisoning by morphine was illustrated by the cases of Miss Hickman and Devereux—the former suicidal or accidental, the latter homicidal. In each instance the body was far advanced in putrefaction and yet Stevenson was able to extract, identify, and weigh the alkaloid and estimate the quantity employed. When it is remembered that morphine is not the easiest alkaloid to dialyse and that it is—or was—generally reputed to break up under conditions of putrefactive decomposition it will be seen what an analytical triumph was Stevenson's. Let the above examples of skill and accuracy in toxicological research suffice to show the pre-eminence of the deceased.

Sir Thomas Stevenson was the author and editor of much excellent literary work on forensic medicine and on hygiene, "Taylor's Principles and Practice of Medical Jurisprudence" in his edition being a text-book of world-wide fame. He also held many distinguished official posts, having been President of the Society of Medical Officers of Health, of the Society of Public Analysts, and of the Institute of Chemistry, and in all his public and private dealings alike he was universally esteemed. He was indeed the soul of honour, and while every act and thought showed how high were his ideals his broad humanity kept him the kindliest and most charitable of men. To his relatives and friends we tender respectful sentiments of condolence and sympathy on their great loss.

JOHN TALFOURD JONES, M.B. LOND., M.R.C.S. ENG., L.S.A.

WE regret to announce the death of Dr. John Talfourd Jones, by which the medical profession is the poorer by a most able and accomplished member. Dr. Talfourd Jones did most excellent work as physician and citizen until he was incapacitated by illness, and the following appreciation of him, which has been sent to us by his friend Dr. F. T. Roberts, well explains the high general and local esteem in which he was held:—

"Talfourd Jones entered University College as a medical student in October, 1858, having matriculated at the London University the previous summer. He distinguished himself more particularly by taking the Filliter Exhibition in pathological anatomy in 1861, when Dr. (afterwards Sir) William Jenner was professor in that subject and the Fellowes gold medal in clinical medicine at the hospital, awarded by Dr. Walshe, then Holme Professor, when he wrote an excellent paper on the Effect of Change of Posture on the Pulse in Acute and Chronic Disease. He subsequently held the post of house physician at this hospital. Dr. Talfourd Jones's chief success at this period of his career, however, was obtained at the University of London. At the Second M.B. Examination in 1863 he gained the scholarship and gold medal in medicine and the gold medal in forensic medicine and toxicology. For some reason he never proceeded to the M.D. but took the diplomas of M.R.C.S. and L.S.A. As showing the estimation in which he was held by the students of University College he was elected President of the Medical Society of that institution, always a much-coveted post. At a later period in his career Dr. Jones was made a life-governor of the College. After obtaining his degrees he held the appointment of medical registrar and pathologist to the Hospital for Sick Children at Great Ormond-street.

"Dr. Talfourd Jones did not settle permanently in London, as was anticipated, and where it seems certain he would have made a name for himself, but returned to Brecon and became house surgeon to the Brecon County and Borough General Infirmary. Subsequently he settled in his native town, where for many years he carried on an extensive and lucrative family and consulting practice, being frequently called to considerable distances. He was appointed physician to the infirmary, a position which he held for a long period, and was subsequently elected consulting physician. He was also medical officer to Christ's College, Brecon. During his residence there Dr. Jones took an interest in municipal matters and was made a justice of the peace for the borough of Brecon, while at the same time he was an ardent Liberal. Moreover, he was active in connexion with military affairs, having been surgeon to the 1st V.B. South Wales Borderers. Nor did he ignore the question of education in Wales, for he served as a member of the council of the University College of South Wales. After having devoted the best years of his life to his work at Brecon Dr. Jones was compelled to leave on account of his health, and, acting on the advice of Sir William Jenner, settled in Eastbourne. When quitting his native town he was presented with a valuable testimonial and an illuminated address by his numerous friends and admirers, a recognition of his services and of the esteem in which he was so widely held which he always looked back upon with the keenest satisfaction and appreciation. He continued in active practice in Eastbourne for several years until stricken down by a sudden cerebral lesion which permanently disabled him for any active professional work and compelled him ultimately to live in retirement. Dr. Talfourd Jones was passionately devoted to his profession and took the keenest interest in his work. His abilities and attainments were of a very high order. He kept thoroughly abreast of the times and was quite familiar with all modern developments in relation to medicine and surgery. Pharmacology and therapeutics had a special attraction for him, as is shown by his contributions to medical literature. Dr. Talfourd Jones was a Fellow of the Medical Society of London and of the Obstetrical Society and a member of the Pathological Society. He was also a member of the British Medical Association in connexion with which he took an active part, having been President of the South Wales Branch in 1877, when he delivered the Presidential address on 'Ophthalmic Therapeutics.' He also read an important communication on 'Hypodermic Medication' before the Association in 1885. Dr. Talfourd Jones presented an attractive personality and was of a genial, sympathetic, and kind-hearted disposition; he was a great favourite with his patients and highly esteemed by all with whom he was associated in public or private life. To those who were privileged to know him more intimately he was a staunch and devoted friend. Dr. Talfourd Jones has left a widow, four daughters, and a son to mourn their loss."

Dr. Talfourd Jones died on July 25th at St. Davids, Pembury, Tunbridge Wells, aged 71 years, and was buried at his native town of Brecon on July 29th.

DEATHS OF EMINENT FOREIGN MEDICAL MEN.—The deaths of the following eminent foreign medical men are announced:—Dr. Eduard Spiegler, extraordinary professor of dermatology in the University of Vienna, aged 48 years.—Dr. H. Hervouet, professor of clinical medicine in the Nantes Medical School.—Dr. Frank H. Montgomery, professor of dermatology in the Rush Medical College, Chicago.—Dr. Louis A. Demers, professor of internal pathology in the Montreal School of Medicine and Surgery.—Dr. Ernst Richard Hagen, formerly extraordinary professor of laryngology and otology, aged 85 years. He had been living in retirement for the last 15 years. He translated a number of the earlier works and papers on laryngoscopy and himself wrote various monographs on the surgery of the throat and ear.

Medical News.

EXAMINING BOARD IN ENGLAND BY THE ROYAL COLLEGES OF PHYSICIANS OF LONDON AND SURGEONS OF ENGLAND.—At the first professional examination held on July 20th, 21st, 22nd, 23rd, 24th, and 25th the following gentlemen were approved in the subjects indicated:—

Chemistry and Physics.—Charles Beresford Alexander, Liverpool University; Howard James Bates, Birmingham University; Roger Orme Bridgman, St. Bartholomew's Hospital; Guy Kenneth Butterworth, St. Mary's Hospital; Ennis Ratcliffe Chambers, London Hospital and Brighton Technical College; William King Churchouse, Charing Cross Hospital; John Greene, Birmingham University; William Edward Ison, St. Bartholomew's Hospital; Farquhar MacGillivray Loughnane, St. Thomas's Hospital; Cecil Granville McClymont and Geoffrey Nootl, Guy's Hospital; Hubert Frederick Overend, Manchester University; Robert Charles Parry, London Hospital; John Rowland Payne, University College, Cardiff; Claude Hollingworth Philips, Brighton Technical College; Edward Phillips, London Hospital; Frank Pearce Pocock, St. Paul's School; Stanley Owen Rashbrook, Londou Hospital; Geoffrey Bower

Richardson, St. Bartholomew's Hospital; Alexander Elder Saunderson, Liverpool University; Cuthbert Shaw-Crisp, St. Mary's Hospital; Jack Garland Skeet and Eric John Staddon, St. Thomas's Hospital; Thomas Joseph Taunton, Brighton Technical School; Arnold Rothwell Taylor, Manchester University; Harold Topham, Leeds University; Maurice Lawrence Treston, Hartley College, Southampton; Donald Sargenson Twigg, Derby Technical College; Stanley Wickenden, Guy's Hospital; and Arthur Kendall Scott Wyborn, Middlesex Hospital.

Chemistry.—Edgar Bernard Argles, St. Mary's Hospital; Richard Albert Banbury, St. Thomas's Hospital; Cecil Stuart Baxter, Liverpool University; Alfred Beuthin Danby, Guy's Hospital; Edward Dance Fountain, St. Mary's Hospital; Owen Gwatken, Manchester University; David Lewis, London Hospital; Alwyne Harold Manfield, Battersea Polytechnic and London Hospital; Tha Htoon Oo, University College; Guy Algernon Pratt, Guy's Hospital; Ibrahim Rashad, Cairo and St. Thomas's Hospital; Walter Graham Reynolds, St. Mary's Hospital; Joseph Edward Rivera, Manchester University; Abd-el Khalek Selim, Guy's Hospital; Lindsay Clive Smith, London Hospital; Harold Tuxford, Middlesex Hospital; and William Cuthbert Whitworth, Guy's Hospital.

Physics.—Otto Baier, Liverpool University; Stephen Leonard Baker, London Hospital; Bertram James Brewitt, St. Bartholomew's Hospital; Charles Frank Burton, London Hospital; Richard Irving Dacre, University College, Bristol; Geoffrey Garland, Leeds University; Harold Cane Godding, Guy's Hospital; Leslie Stewart Goss, B.A. Oxon., Middlesex Hospital; Francis Henry Guppy, St. Bartholomew's Hospital; James Stanley Higgs, St. George's Hospital and King's College; William Ben Glynn Jones, Liverpool University; Claude Kingston, University College, Bristol; and Hubert Dennis Shore, Guy's Hospital.

Biology.—John Vere Orlebar Andrew, London Hospital; Otto Baier, Liverpool University; Edwin Randolph Bailey, Guy's Hospital; Richard Albert Banbury, St. Thomas's Hospital; Howard James Bates, Birmingham University; Cecil Stuart Baxter, Liverpool University; William Arthur Hazlerigg Noel Bell, St. Thomas's Hospital; Samuel Isaac Blairmann, Birkbeck College; Thomas Henry Brown, St. Bartholomew's Hospital; Rowland Burnell Campion, Guy's Hospital; William King Churchouse, Charing Cross Hospital; Richard Irving Dacre, University College, Bristol; William Dale, Birkbeck College; James Douglas Driberg, London Hospital; William Agar Scholefield Duck, Birkbeck College; Harry Dudley, University College; Murray Dudley Evans, London Hospital; Harold Hugh Fairfax, Charing Cross Hospital; Valentine Fox, London Hospital; Harold Cane Godding, Guy's Hospital; Leslie Stuart Goss, B.A. Oxon., Oxford University and Middlesex Hospital; John Greene, Birmingham University; Harold Stanley Groves, Guy's Hospital; Harold Harvey, Birmingham University; Arthur Ernest Williams Idris, University College; Eric Llewelyn Ivens, London Hospital; Kenneth John Taylor Keer, Guy's Hospital; Joseph Lloyd, University College, Cardiff; Reginald Hutchinson Lucas and Cecil Granville McClymont, Guy's Hospital; Benjamin Robert Mayman, King's College; Frederick Meinertzhagen, St. Bartholomew's Hospital; Henry Leslie Messenger, Birkbeck College; William Morris, London Hospital; Herbert Henry Powys Morton, King's College; Noel Spencer Nairne, St. Thomas's Hospital; Geoffrey Noott, Guy's Hospital; George Marshall Oakden, Sheffield University; Basil Raymund Clinton Palmer, St. Mary's Hospital; James Murray Webb Parr, London Hospital; Edward Phillips, London Hospital; Frank Pearce Pocock, St. Paul's School; Garnet Wolseley Pool, St. Thomas's Hospital; D'Arcy Power, St. Bartholomew's Hospital; Guy Algernon Pratt, Guy's Hospital; Cyril Seys Ramsay-Hill, Brighton Technical College; Herbert Jack Rawson, St. Thomas's Hospital; Abdel Khalek Selim, Guy's Hospital; Jack Garland Skeet and Eric John Staddon, St. Thomas's Hospital; Walter Bernard Risk Stower, St. Bartholomew's Hospital; Kenneth Guy Taylor, London Hospital; Charles Tolmie Tresidder, St. Bartholomew's Hospital; Harold Tuxford, Middlesex Hospital; Donald Sargenson Twigg, Derby Technical College; Charles George Cradock Vawdry, St. Mary's Hospital; Hamlet Mark Whelan, University College, Cardiff; John Herbert Wiles, Birkbeck College; and Nadir Zeinun, Beyrout and St. Thomas's Hospital.

UNIVERSITY OF LONDON.—At the Intermediate

Examination in Medicine held recently the following candidates satisfied the examiners:—

†Frederick Jasper Anderson, St. Bartholomew's Hospital; Winifred Austin, London (Royal Free Hospital) School of Medicine for Women; Cyril Carlyle Beatty, London Hospital; Thomas Beaton, University College, Cardiff; Benjamin Bernstein, London Hospital; †‡William Arthur Berry, Queen's College, Belfast (obtained marks qualifying for the scholarship); Gilbert Alan Blake, Guy's Hospital; Gertrude Brooks, London (Royal Free Hospital) School of Medicine for Women; Arthur Carnarvon Brown, St. Bartholomew's Hospital; Joseph Henry Campain, University of Liverpool; Eric Edmund Chipp and Alfred Ernest Dagnall Clark, St. Bartholomew's Hospital; Irene Nancy Clough, London (Royal Free Hospital) School of Medicine for Women; Frank Cook, Guy's Hospital; Arnold Charles S. Courts, University College; William Edmund Crowther, University of Leeds; Maxwell Dick, University College; Gertrude Margaret Dobrashian, London (Royal Free Hospital) School of Medicine for Women; Thomas Peters Edwards, St. Bartholomew's Hospital; Basil Franklin Eminson, Charing Cross Hospital; Robert Noel Farrer and James Maurice Foord, University of Leeds; William Charles Fowler, University College; Helen Marion Franklin, London (Royal Free Hospital) School of Medicine for Women; George Herbert Garlick, St. Mary's Hospital; Alfred John Gibson, St. Bartholomew's Hospital; Abdul Hamid Gool, Guy's Hospital; Alexander Keith Hamilton, University of Liverpool; Reginald Gordon Hill, St. Bartholomew's Hospital †Charlotte Leighton Houlton, London (Royal Free Hospital) School of Medicine for Women; David William Jones, London Hospital; Charles Douglas Kerr, St. Bartholomew's Hospital; Charles Dones Killpack, Guy's Hospital; Peregrine Stephen B. Langton, Middlesex Hospital; Andrew Bonar Lindsay, London Hospital; Martin W. Littlewood, St. Thomas's Hospital; Mary Frances Lucas, London (Royal Free Hospital) School of Medicine for Women; Roy Kyffin Mallam, London Hospital; *†‡Henry Linnington Martyn, King's College (scholarship in anatomy, scholarship in physiology, and scholarship in pharmacology); Ernest Spencer Miller, University of Liverpool; Harold Arundel Moody, King's College; Richard Naunton O. Moynan, University College, Cardiff; Gerald Thomas Mullally, Guy's Hospital; Alfred Arthur Edmund Newth, King's College and Westminster Hospital; Ambrose Owen, University College, Cardiff; Henry Brice Parker, University College, Bristol, and London Hospital; †Joan Fraser Parker and Sara Louisa Penny, London (Royal Free Hospital) School of Medicine for Women; Walter Woodall Pratt, University College, Bristol; Henry Martin Rashbrook, London Hospital; *†‡Stanley Ritson, King's College (obtained marks qualifying for the scholarship); Richard Alun Rowlands and Frederic Sanders, London Hospital; Edward Argent Saunders, Middlesex Hospital; Edward Gustave Schlesinger, Guy's Hospital; William Faulkner V. Simpson, London Hospital; Ernest Gerald Stanley, St. Bartholomew's Hospital; Ludwig Siebert B. Tasker, University College; Leonard Herbert Taylor, Charing Cross Hospital; †Alan Herapath Todd, Guy's Hospital; †John William Trevan, St. Bartholomew's Hospital; Arthur Bayford G. Underwood, University College; Antonio Daniel Vazquez, Guy's Hospital; Michel Demètre T. Viasto, University College; †Harry Bertram Walker, London Hospital; Gerald Whittington, Charing Cross Hospital; and Stanley Wyard, University College, Cardiff, and University College.

The following candidate having qualified in organic chemistry has now completed the intermediate examination in medicine:—

Dossibai Rustomji C. Patell, University College.

* Distinguished in anatomy. † Distinguished in physiology. ‡ Distinguished in pharmacology.

N.B.—This list, published for the convenience of candidates, is issued subject to its approval by the Senate.

LONDON SCHOOL OF TROPICAL MEDICINE.—

The following students have successfully passed the examination at the end of the twenty-seventh session:—

*H. B. Owen, M.B., B.C. Cantab.; *P. J. Verrall, M.R.C.S. Eng., L.R.C.P. Lond., B.C. Cantab.; *Captain G. Fowler, I.M.S., L.R.C.P. & S. Edin., L.F.P.S. Glasg., D.P.H. R.C.S.; C. A. L. Mayer, M.B., B.S. Lond., M.R.C.S. Eng., L.R.C.P. Lond.; A. F. G. Kerr, M.B., B.Ch. Dub.; L. Bostock, L.R.C.P. & S. Edin., L.F.P.S. Glasg.; Captain F. Harvey, R.A.M.C., M.R.C.S. Eng., L.R.C.P. Lond., D.P.H. R.C.S.; S. T. Gunasekara, L.M.S. Ceylon; Miss E. W. Perkins, M.B., B.S. Lond.; L. F. Guevara-Rojas, M.D. Caracas; T. S. Macaulay, M.B., Ch.B. Glasg.; W. J. Lubeck, M.R.C.S. Eng., L.R.C.P. Irel., D.P.H. Camb.; Miss M. W. Stott, M.B., Ch.B. St. Andrews; J. H. Cremer, M.D. Paris; P. J. Kelly, M.B., Ch.B. Glasg.; and H. H. Baker, M.B., B.Ch. Oxon.

* With distinction.

FOREIGN UNIVERSITY INTELLIGENCE.—

Berlin: Dr. C. A. Ewald has been promoted to an honorary Professorship of Medicine. Professor E. Aberhalden, who has been invited to succeed Professor Hüfner in Tübingen, has decided to remain in Berlin. The title of Professor has been conferred upon Dr. Heinz v. Bardeleben, *privat-docent* of Gynæcology, a son of the eminent surgeon; Dr. Friedrich Kopsch, first assistant in the Anatomical Institute; and Dr. Steyrer, *oberarzt* in the Second Medical Clinic.—*Berne:* Dr. Otto Tunmann has been recognised as *privat-docent* of Pharmacognosis.—*Chicago (North-Western University):* Dr. Alfred N. Richards has been appointed to the chair of Pharmacology.—*Freiburg:* Dr. Franz Samuely has been recognised as *privat-docent* of Medicine.—*Giessen:* Dr. Sitzenfrey has been recognised as *privat-docent* in Midwifery and Gynæcology.—*Göttingen:* Dr. Wolfgang Heubner, who recently migrated from Strasburg, has been appointed Extraordinary Professor of Pharmacology and Director of the Pharmacological Institute in succession to Professor K. Jacobj who goes to Tübingen. Dr. Bornstein has been recognised as *privat-docent* of Psychiatry and Neurology.—*Halle:* Dr. E. Hoffmann of Berlin has been appointed Extraordinary Professor of Dermatology.—*Heidelberg:* Dr. Otto Ranke has been recognised as *privat-docent* of Mental and Nervous Diseases.—*Kiel:* Dr. Lüthje of Frankfort has been offered the chair of Medicine in succession to Dr. H. Quincke, who is retiring.—*Leipsic:* Dr. Arthur Läwen has been recognised as *privat-docent* of Surgery.—*Marburg:* Dr. August Gürber of Würzburg has been appointed Professor of Pharmacology in succession to Dr. A. Heffter.—*Munich:* Dr. Otto Frank of Giessen has been appointed to the chair of Physiology in succession to the late Professor K. von Voit.—*Naples:* Dr. Giuseppe Dei Conte has been recognised as *privat-docent* of External Pathology.—*Rome:* Dr. Achille Torretta has been recognised as *privat-docent* of Laryngology and Otology and Dr. Mario Levi della Vida as *privat-docent* of Bacteriology.—*Strasburg:* Dr. Heinrich Bayer has been promoted to an Honorary Ordinary Professorship of Midwifery.—*Vienna:* Dr. Rudolf Kaufmann has been recognised as *privat-docent* of Medicine and Dr. Klemens von Pirquet as *privat-docent* of Children's Diseases. Negotiations

between the Ministries of Education and Finance, which have been going on for some time, have at last resulted in the establishment of a Third Gynæcological Clinic. This is to be housed in what is now the Midwives' Clinic, accommodation for which will be provided elsewhere.—*Würzburg:* Dr. Melchior Faulhaber has been recognised as *privat-docent* of the Treatment and Diagnosis of Disease by the Roentgen Rays.

THE WATER-SUPPLY OF TEIGNMOUTH (DEVON).—Lord Clifford of Chudleigh on July 23rd formally opened the new water-works at Hazeldown Reservoir, which have been erected at a cost of £20,000, for augmenting the existing supply of Teignmouth.

UNIVERSITY OF CAMBRIDGE.—Mr. W. Jackson Pope, F.R.S., F.C.S., professor of chemistry at the Municipal School of Technology, Manchester, has been elected professor of chemistry in place of Professor Liveing who has resigned. An illuminated address was presented to Professor Liveing by Professor Dewar and staff of the chemical laboratories on his vacating the chair which he had held for nearly 50 years.

THE SOUTH AFRICAN CIVIL SURGEONS.—The sixth dinner of this association was held at Oddenino's Imperial Restaurant, Regent-street, on Friday, July 24th. It will be remembered that at the first dinner, held in June, 1901, the late Sir William Mac Cormac was in the chair and Mr. Brodrick and Lord Roberts were present. This year the dinner was again of exceptional interest, Mr. Haldane and Sir Alfred Keogh being amongst those present, while besides the speakers there were Sir W. Watson Cheyne, Bart., Sir Alfred Thomas, M.P., Brigade-Surgeon Lieutenant-Colonel Harrison, Colonel Russell, Colonel Wardrop, Surgeon-Colonel Adams, Mr. G. H. Makins, Mr. H. T. Butlin, Mr. J. Lynn Thomas, Mr. G. L. Cheatle, Dr. H. H. Tooth, Dr. Norman Moore, Dr. Donald Hood, and Dr. F. M. Sandwith; nearly 100 in all. Mr. A. A. Bowlby (late of the Portland Hospital in South Africa) was in the chair. Sir Frederick Treves proposed, and Mr. Haldane replied to, the toast of "The Imperial Forces"; Mr. C. Stonham proposed, and Sir Alfred Keogh responded to, the toast of "The Guests"; and Mr. T. H. Openshaw proposed the health of the chairman who, in his reply, proposed the toast of the honorary secretaries, Mr. C. Gordon Watson and Mr. F. E. Fremantle. Mr. Haldane expressed his sense of the value of the medical arm, both curative and preventive, to the efficiency of the army both in peace and war, and explained his intentions in laying down a scheme for a Territorial Army and his reliance on the coöperation of all classes and especially of the medical profession in making that scheme a success and insuring that safety to the country which patriotism demands and on which peace depends. Sir Alfred Keogh, as Director-General of the Army Medical Service, showed the immense improvement in the health of the army due to the reorganisation effected by Mr. Brodrick, as had been previously shown by Sir Frederick Treves and acknowledged by Mr. Haldane. The number of military invalids sent to England during the last trooping season was 1031, as compared with 2178 in the previous season. The number of admissions to hospital in India for enteric fever in 1907 was 910, with 192 deaths, as against 1095 and 224 deaths in 1906; the admission rate for venereal diseases per 1000 of strength had sunk from 537 in 1895, 371 in 1898, 298 in 1900, and 154 in 1905 to 89·9 this last year. For the Territorial Army, as for the regular army, a medical organisation was required under four heads: (1) general hospitals; (2) sanitary companies; (3) field medical units; and (4) medical and sanitary services with combatant units. At present forces were being concentrated on the field medical units, the combined field hospital and bearer company of South African days, 67 per cent. of which had been obtained, and he begged every medical man in the country to aid in securing recruits for the regimental sanitary service by sending names of probable recruits to the administrative medical officers of their respective divisions of the Territorial Force. He relied on the patriotism and good sense of the profession to complete the medical organisation of the Territorial Army and add to their high professional repute and traditions. A most successful evening closed with an announcement that the next dinner would be held in 1911 at a date to be fixed convenient to the Scottish civil surgeons. An appeal was made to all medical men who had served in the war to send their addresses to the honorary secretaries at 44, Welbeck-street, London, W.

ST. THOMAS'S HOSPITAL MEDICAL SCHOOL.—The Entrance Scholarship for University students has been won by Mr. H. C. Bazett of Wadham College, Oxford. In the examination for the entrance Science Scholarships W. B. Foley and F. McG. Loughnane were equal and the prizes are divided; each is awarded a scholarship of £105.

THE AFTER-CARE ASSOCIATION.—The Corporation of the City of London has made a grant of £50 to the funds of the After-Care Association for Poor Persons Discharged Recovered from Asylums for the Insane, Church House, Westminster. This association, which was formed in 1879, is the only charity of its kind in the United Kingdom and does excellent work in assisting cases from all parts of the country. Patients are helped by obtaining for them when needful an interval of change of scene and air; by boarding them out, when thought desirable in families, in the country under proper care; by placing them in various institutions in London and other large towns until work can be found; by finding them suitable employment; and by giving them grants of money towards maintenance while seeking work, by providing clothing, or by procuring tools when occupation is found. Communications should be made to the Secretary, Mr. H. Thornhill Roxby, Church House, Dean's-yard, Westminster, London, S.W., by whom contributions will be thankfully received, or they may be paid into the account of the "After-Care Association," Union of London and Smiths' Bank (Victoria Street Branch), Westminster, London, S.W.

MEDICAL INSPECTION OF SCHOOL CHILDREN.—The Somerset Education Committee has decided to apply to the Board of Education for power to employ school nurses and to provide spectacles for certain school-children and also to contribute towards the support of such hospitals as the committee may desire to use for children who require special treatment. During the seven weeks ending June 15th there were medically inspected in Somerset 4409 children. The children attending the Pontypridd schools have been medically inspected for several years past and in his last report Dr. E. J. Griffiths states that of 341 children examined he found that as many as 93 per cent. were suffering more or less from defective teeth. In connexion with the occurrence of cases of ringworm and eczema at one school Dr. Griffiths urged the appointment of a school nurse and his recommendation has been adopted by the education committee. More than 11 per cent. of the children examined had defective vision. Spectacles have been provided in suitable cases by the Pontypridd committee for some time past. In a report to the Aberdare education committee the medical officer of health (Dr. M. J. Rees) states that among the children attending seven schools in the town 27 per cent. suffered from defective teeth and 25 per cent. had defective eyesight. It is noticeable that none of the children at the industrial school had bad teeth.

THE MIDWIVES ACT IN SHROPSHIRE.—In his annual report for 1907 the medical officer of health (Dr. James Wheatley) deals at some length with the question of the available supply of midwives in Shropshire. There are about 300 midwives on the roll but the number is being reduced year by year. In view of the size of the county Dr. Wheatley anticipates some difficulty in keeping up the supply, and suggests that a local nursing association should be formed for every district in the county where no satisfactory midwife is available. He admits that there are financial difficulties connected with the carrying out of this suggestion but he considers that if parishes were properly grouped much would be done to solve the problem. The county council makes a grant of £180 per annum to the county nursing federation on condition that the latter bears a portion of the expense entailed in the training of midwives to practise in the county. Of the 300 Shropshire midwives about one-half are married and presumably have other means of support than their own earnings. A statement of the number of confinements attended during 1907 by each midwife reveals the fact that only about 5 per cent. can be earning a living

at the work. Dr. Wheatley points out that the inspection of midwives is an important means of spreading knowledge of the true principles that apply to the feeding and care of infants. Although no precise data are given, a general opinion is expressed that the majority of the children in the country districts are breast-fed for a longer or shorter period. In the adjoining county of Hereford returns furnished to the inspector of midwives showed that in 1907 of the children born 83 per cent. were breast-fed and of the remainder 12 per cent. were fed out of bottles provided with a long tube and 5 per cent. out of the much more cleanly and satisfactory boat-shaped bottle.

Parliamentary Intelligence.

NOTES ON CURRENT TOPICS.

The End of the Summer Session.

PARLIAMENT adjourned on Saturday, August 1st, until Monday, Oct. 12th. Members of both branches of the Legislature are glad to get away for the holidays at this season. The sitting of the House of Commons in August always imposes a severe strain on the physical resources of Members, especially if late sittings have to be held to wind up the business of a heavy Government programme. The tendency this year has been to curtail the number of late sittings. The Prime Minister is known to be averse to them. The process of "legislation by exhaustion" is in the present Parliament giving way to "legislation by guillotine." Objection is taken by the Opposition to the use of the closure by compartment in the case of Bills of first-rate importance on the ground that under it many of the details escape full and searching criticism. Whatever may be the objections to Mr. ASQUITH'S arrangement of business on political grounds, his leadership has coincided with a diminution of the tendency to prolong the sittings of the House into the early hours of the following day. From the physical point of view, the absence of the strain of remaining out of bed until daybreak is welcome not only to Members but to the hard-worked officials of the House and other persons whose duty compels them to attend its debates. However, if the burden of night work falls less heavily on the House of Commons now, the amount of work which Members are called upon to perform during the day is increasing. Owing to the development of the practice of sending Bills to Standing Committees the attendance of a certain number of Members at Westminster in the forenoon is required. The House of Commons does not assemble until a quarter to three o'clock. Standing Committees, as a rule, meet at half-past 11 or 12. Members who serve upon them have thus three or four hours added on to their Parliamentary day. It would be interesting to discover whether these changes taken as a whole are beneficial to the health of Members.

The Royal Assent.

On Saturday, August 1st, the Royal Assent was intimated by a Commission under the Great Seal to a large number of measures which have been passed during the present session of Parliament. Amongst the measures receiving the Royal Assent were the Irish Universities Act, the University of Durham Act, and the Coroners (Ireland) Act. These Acts passed through their final stages in the House of Lords during the concluding week of the summer session.

The Autumn Session.

A large amount of Parliamentary business is carried over to the autumn session. When the House of Commons reassembles in October it will deal with the report stage of the Children Bill, a measure which amongst other matters deals with juvenile smoking and infant life protection. The Prevention of Tuberculosis (Ireland) Bill will then be submitted to a Standing Committee in order that various points of administration in connexion with it may be considered and, if needful, adjusted. The great majority of private Members' Bills which have been introduced since Parliament met early in the year must now be regarded as dead so far as this session is concerned. It is hoped that the promised Bill dealing with milk-supplies may be introduced by Mr. BURNS, the President of the Local Government Board, soon after the House of Commons reassembles, but it is inevitable that the claims of departmental measures, however useful, will be subordinated to the progress of the leading Bills in the Government's programme.

White Phosphorus Matches Prohibition Bill.

Mr. GLADSTONE, the Home Secretary, has introduced into the House of Commons a bill "to prohibit the manufacture, sale, and importation of matches made with white phosphorus and for other purposes connected therewith." The Bill has been read a first time.

Reports of Royal Commissions.

Members of Parliament had no time to study the recommendations of the Report of the Royal Commission on the Care and Control of the Feeble-minded before they went away on their holidays. However, it is certain that the bold scheme of administrative change sketched out in the report must engage the close attention of the Legislature. It is expected that the report of the Royal Commission on Vivisection will be issued before Parliament reassembles.

HOUSE OF COMMONS.

WEDNESDAY, JULY 29TH.

The Royal Commission on Tuberculosis.

In the course of the debate on the report of the note for the Local Government Board,

Mr. LONG said that the Royal Commission on Tuberculosis which he was instrumental in appointing had now been six years in existence and its labours had been of enormous benefit to the country. He went on to refer to the work of Lord Blyth in providing the necessary farm on which the experiments could be carried out. Part of this work had been completed but more remained to be done. They knew little or nothing of the degree of risk lurking in milk and meat, and in the interests of the population a great deal remained to be done in the way of investigation. He hoped that the Government would not check the inquiry. Lord Blyth's heart was in the work of continuing the inquiry and, if it was believed that the present system was not altogether satisfactory, he was sure that Lord Blyth would be ready to meet the Government more than half way in any suggestions they might care to make. It was a question that vitally affected the poorer classes of the country. It was now admitted that this disease was not hereditary, except in the sense that an infant would get it through breathing the air which its afflicted mother had already breathed. This great fact had altered our knowledge and therefore our practice in connexion with the disease. How much more might we not learn by careful and patient investigation of this terrible scourge? An expenditure of £5000 a year for continuing this investigation would be money well spent in the interests of the people at large.

Sir PHILIP MAGNUS also expressed the hope that no steps would be taken to dissolve the Royal Commission on Tuberculosis. Many points with regard to the disease were still unsettled. Laboratories had been erected for the express purpose of the investigations of the Commission and it was hoped that Lord Blyth's farm would still be at their disposal. Questions relating to the proper conditions for the inspection of animals and the examination and distribution of the milk-supply had still to be inquired into.

Mr. BURNS (President of the Local Government Board), in the course of his reply to the debate, said that the Royal Commission on Tuberculosis which had been appointed six years ago had been presided over by two gentlemen of great distinction, and the doctors and officers who served on it deserved the praise of the community. The final report was in preparation and he had been pressed by doctors and by some of the Commissioners to extend the reference and scope of the inquiry. That he was disinclined to do because he thought that the £50,000 or £60,000 it had cost and the six or seven years of time it had taken were almost enough for the particular subject. However, he was prepared to consider whether the farm and laboratory of Lord Blyth might be made the nucleus of a scheme of narrower scope and purpose than the Royal Commission. On the general question of infectivity of tuberculosis both in men and in animals he need not dwell, because in connexion with the Milk Bill which he had promised, which he had in draft, and hoped to let the House have as soon as he could get the Board of Agriculture to express its views on the question of tuberculous cows, they would be able to discuss it at greater length. Serious although the scourge of consumption was, he did not hope for its discontinuance and final abatement so much from surgical or laboratory work as from other causes and remedies. Speaking generally, he regarded consumption the world over as a social disease due to low wages and bad and insufficient accommodation. It was satisfactory to know as Britons that in this regard, as in many other aspects of public health, we were leading the world. In London 1·25 persons died from consumption to 2 in Berlin and 2·50 to 3 in Paris. To put in in a better form, in the last 30 years the death-rate from consumption had diminished from 25 to 10 per 10,000 persons.

Infantile Mortality in the Potteries.

Sir CHARLES DILKE (speaking on the Home Office Vote) dealt with the question of infantile mortality in the Potteries. He said that although the medical officer of Longton reported a diminution in infantile mortality he drew attention to the fact that infantile mortality all over England was exceptionally low in 1907, owing to the comparatively small amount of summer diarrhœa. The medical officer of Longton gave an interesting table of the mothers employed, from which it appeared that 281 were employed in potting and 27 otherwise. In the new report of the county medical officer, Dr. G. Reid, it was stated that "in Longton, amongst infants artificially fed, the mortality is increased four and a half times." On turning to the reports of medical officers from all the potteries he found that it was reported of Tunstall that the rate in this low year was excessively high—188—and that it indicated the baneful factory employment of married women. Of Fenton it was reported that although there were only 16 deaths from diarrhœa against 42 in the previous year, yet the rate was 164, including 62 deaths from atrophy. The medical officer there advised special legislation. Dr. Oliver in his new book said that where both the parents were working in lead the children if born alive died shortly after birth; and also drew attention to the high percentage of still-births and to the short life and imbecility of many survivors. Part of Fenton was rural but in the potting ward nearly one-fifth of the total number of children born had died before one year. In Wolstanton potting ward the rate was 172, and the medical officer wrote that this high infant mortality was no doubt due in a great measure to the greater number of women who were working. In the first half of 1908 the cases of lead poisoning in the potting trade numbered as many as 70, against 38 in the corresponding half of last year. Last year he complained of retrogression on the part of the Government as to the example which they set in the use of leadless glaze. He was glad that this year there were signs of improvement. The last large contract made by the Postmaster-General for insulators included a large portion of leadless glaze. There seemed to be signs that great Government offices outside the ordinary ken of the Office of Works and the Home Office might come into the general scheme.

THURSDAY, JULY 30TH.

Deaths under Anæsthetics.

Mr. COOPER asked the Secretary of State for the Home Department whether he could give the number of deaths from anæsthetics in England in each year ending June 30th from 1901 to 1908; whether the percentage

of deaths to administrations had increased; whether the increase, if any, had been in private as well as in hospital practice; and whether he would consider the advisability of asking the Royal Society or the Royal College of Physicians to institute an inquiry into the cause or causes of the increase in the number of deaths, and advise him whether any rules were required regulating the conditions under which anæsthetics were given.—Mr. GLADSTONE (by written answer) replied: The number of deaths under anæsthetics administered for the purpose of operations which occurred in England and Wales in each year ending Dec. 31st from 1901 to 1906 is given in the Reports of the Registrar General. The figures are in 1901, 133; in 1902, 148; in 1903, 146; in 1904, 156; in 1905, 155; and in 1906, 183. I am unable to give the other information asked for, but the whole question is already receiving consideration by the Government in consultation with the General Medical Council.

Ambulances for Street Accidents in London.

Mr. COOPER asked the Secretary of State for the Home Department whether the proposal made by the London County Council in its General Powers Bill, 1906, to establish a system of motor ambulances to deal with street accidents in London was opposed by the Corporation of the City of London before a committee of this House in favour of horsed ambulances; whether he was aware that the Corporation of the City of London had now adopted and was successfully working in the City a system of motor ambulances on the lines suggested by the London County Council for the whole of the county; and what were his reasons for opposing the extension of this system to the County of London.—Mr. GLADSTONE (by written answer) replied: The proposals made by the London County Council in its Bill of 1906 were opposed by Sir Ralph Littler on behalf of the Corporation of the City, but the ground of the opposition was only in so far as the County Council proposed to take powers in the City as well as in other parts of the metropolis. The electric motor ambulance service in the City was inaugurated in 1907. I understand that up to the present only one ambulance has been started, but the service as at present working gives, I believe, complete satisfaction. The reasons for opposing the proposals made by the London County Council in 1906 are given in the Home Office report which was before the committee of both Houses. The view taken in that report was that it was a question whether any additional facilities required would not be more efficiently and economically provided by a development of the existing services rather than by the establishment of a new public service acting independently of existing agencies. It was decided that the best course was to appoint a departmental committee to consider the whole question and it is hoped that this committee will report in the autumn. The right honourable gentleman added, in reply to a further question on the same subject: The London County Council's Bill of 1906 provided for general powers to establish an ambulance service, but their intention was only to provide a service of an experimental and limited character. The clauses dealing with the matter were thrown out by a committee of the House of Lords after consideration of the Home Office report on the Bill and a departmental committee was shortly afterwards appointed to inquire into the whole question. Wheeled litters have been sanctioned since 1906, and others previously sanctioned have been placed out since that date according as it has been found possible to meet existing needs. I have no powers of this kind elsewhere than in the metropolitan police district, the powers as regards the provision of litters in that district belonging to the Secretary of State as the police authority for the metropolis.

The Increase in Certified Lunatics.

Mr. CARLILE asked the Prime Minister whether, seeing that the report of the Lunacy Commissioners for 1907 stated that the rate of increase in certified lunatics was equivalent to 237·2 per cent. over the figures for 1859, and that the general population increase for the same period was at the rate of 77·5 per cent., he could see his way to cause inquiries to be made as to the causes of this continued and large percentage of increase of certified lunatics.—Mr. GLADSTONE wrote in reply: I beg to answer this question on behalf of my right honourable friend. As pointed out in the report of the Commissioners there are many considerations to be borne in mind in interpreting the figures as to lunacy, and I would also call attention to the special report of the Commissioners on the alleged increase of insanity issued in 1897. The whole question is receiving careful consideration, and the Government will no doubt receive assistance from the report of the Royal Commission on the Feeble-minded which will be issued in a few days.

FRIDAY, JULY 31ST.

Deaths under Anæsthetics.

Mr. BRAMSDON asked the Secretary of State for the Home Department whether his attention had been called to the recent deaths of three persons under anæsthetics in London hospitals, and which were the subject of coroners' inquiries on July 25th—viz., Henry Walter Furlonger, aged 52 years, an employee of the City of London Brewery, who died in the Central London Throat and Ear Hospital; Lydia Thompson, aged 45 years, who was given an anæsthetic at the Royal Free Hospital for an operation to remove a needle which had penetrated her hand, and in neither of which cases had the operation actually commenced; and Harold Cecil Buttram, aged 16 years, who died at the London Hospital in the middle of the removal of some dead bone from his jaw; and whether, having regard to the continued cases of deaths under anæsthetics, he could now see his way clear to recommend the appointment of a Royal Commission to inquire into the matter.—Mr. GLADSTONE furnished the following written reply: I have seen newspaper reports of two of the cases referred to. I am in communication with the Lord President of the Council, and through him with the General Medical Council, on the question whether a course of instruction in the administration of anæsthetics can be included in all cases in the course of study required for a medical qualification; and I think that the question of holding a formal inquiry by Royal Commission or committee may with advantage be postponed, at any rate until I know what action the medical authorities are prepared to take in this matter.

The Cost of Lunatic Asylums.

In reply to a question put by Mr. T. F. RICHARDS, Mr. GLADSTONE wrote: In the year 1905-06, the last for which complete figures are available, the total expenditure of the local authorities of England and Wales in respect of lunatics and lunatic asylums, as ascertained provisionally for the purposes of the summary of the local taxation returns, was £3,551,955. This is made up as follows: (1) Loan charges (other than those paid by the London County Council), £642,686; and (2) maintenance and other charges not met out of loans, £2,909,269. The total amounts received by the local authorities in that year in the shape of grants from the Exchequer and other receipts which can be definitely allocated as being in respect of lunatics and lunatic asylums were: Grants, £878,193; miscellaneous receipts not derived from taxation, £421,664. There is, in addition to the above, the cost of the Broadmoor Criminal Lunatic Asylum and of the Lunacy Commission, which fall entirely on Imperial funds. The former of these, including expenses charged to other funds or votes, but allowing for appropriations in aid, was in the same year (1905-06) £38,966, and the latter £18,764.

The Cost of Inebriate Reformatories.

In reply to Mr. TOULMIN, Mr. GLADSTONE stated that the cost of certified inebriate reformatories in England and Wales in 1906 was £55,489. Of this amount the State contributed £27,644 and the local authorities £27,845. Besides the reformatories a number of inebriate retreats had been established by philanthropic bodies and private persons, but no contribution was made to these institutions from public funds.

The Systematic Overwork of Children.

Mr. VERNEY asked the Secretary of State for the Home Department whether, in view of the reports recently made by factory inspectors dealing with the disease and mortality caused by systematic overwork of children in conditions often detrimental to health, he would consider the advisability of introducing fresh legislation for the purpose of increasing the penalties for such offences under the Employment of Children Act, 1903, and in cases of repeated conviction for these offences for providing for the imprisonment of those who were responsible, without the option of a fine, instead of the fines now imposed by the Act.—Mr. GLADSTONE (by written answer) replied: The whole question will receive my careful consideration and I will bear in mind the point whch the honourable Member raises as to the adequacy of the existing penalties.

BOOKS, ETC., RECEIVED.

BAILLIÈRE, TINDALL, AND COX, 8, Henrietta-street, Covent Garden, London, W.C.

The National Physique. By A. Stayt Dutton, L.R.C.P. Lond., M.R.C.S. Eng. Price 5s. net.

Maternity Nurses' Charts and Case Book. Specially arranged for Use in Private Practice. By Gertrude C. Marks, Certificated, Obstetrical Society; Registered, Central Midwives Board; late of Queen Charlotte's Hospital; Authoress of "The Maternity Nurses' Daily Guide." Price 1s. net.

BUTTERWORTH AND CO., 11 and 12, Bell-yard, Temple Bar, London, E.C. (SHAW AND SONS, 7 and 8, Fetter-lane, London, E.C.)

Encyclopædia of Local Government Board Requirements and Practice. By A. E. Wood, Esq., and T. R. Johnson, Esq. Vol. I. Adjustments to Housing of the Working Classes. Vol. II. Inebriate Reformatories to Workhouses. Price not stated.

CURRIE, JOHN, 34, Briarbank-terrace, Edinburgh.

Medical Examination Questions set at the University of Edinburgh, Royal College of Physicians, Edinburgh, Royal College of Surgeons, Edinburgh, and Faculty of Physicians and Surgeons of Glasgow for Several Years. 1908. Price 2s. net.

FISCHER, GUSTAV, Jena.

Handbuch der Technik und Methodik der Immunitätsforschung. Herausgegeben von Prof. Dr. R. Kraus in Wien und Dr. C. Levaditi in Paris. Erster Band. Zweite Lieferung. Price M. 20.

FORDHAM UNIVERSITY PRESS, New York.

The Popes and Science. The History of the Papal Relations to Science during the Middle Ages and Down to our own Time. By James J. Walsh, M.D., Ph.D., LL.D., Professor of the History of Medicine and of Nervous Diseases at Fordham University School of Medicine; Professor of Physiological Psychology at St. Francis Xavier's and Cathedral Colleges, New York; and Lecturer on Biology at the Catholic Summer School of America. Price not stated.

GRAFTON PRESS, THE, 70, Fifth-avenue, New York.

Transactions of the American Association of Genito-Urinary Surgeons. Twenty-first Annual Meeting held at the Shoreham Hotel, Washington, D.C., May 7th and 8th, 1907, and Joint Session with the American Gynecological Society at the George Washington University, May 9th, 1907. Vol. II. Price not stated.

HARTLEBEN, A., Seilerstätte, 19, Wien, I.

Über die Verhütung der Bleigefahr. Von Dr. Josef Rambousek Privat-dozent für Gewerbehygiene, k. k. Bezirksarzt der Statt halterei in Prag. Price M 3.

HIRSCHWALD, AUGUST, Unter den Linden, 68, Berlin, N.W.

Bericht über den XIV. Internationalen Kongress für Hygiene und Demographie. Berlin, 23-29 September, 1907. Band II. Band III. (I. Teil); Band III. (II. Teil). Band IV. Price not stated.

Bibliothek v. Coler-Schjerning. Band XV. Compendium der Verbandlehre. Von Dr. Eduard Sonnenburg, Geheimer Medizinalrat, ord. Professor honor. an der Universität und Dr. Richard Mühsam, Oberarzt an der chirurgischen Abteilung des städt. Krankenhauses Moabit in Berlin. Zweite Auflage. Price M. 3.

Band XXVI. Die Verletzung der Arteria meningea media. Von Dr. Custodis, Stabs- und Abteilungsarzt im I. Westpreussischen Feld-Artillerie-Regiment No. 35. Price M. 3.

LEWIS, H. K., 136, Gower-street, London, W.C.

The Extra Pharmacopœia of Martindale and Westcott. Revised by W. Harrison Martindale, Ph.D., F.C.S., and W. Wynn Westcott, M.B. Lond., D.P.H., H.M.'s Coroner for North-East London. Thirteenth edition. Price 10s. 6d. net.

MARHOLD, CARL, Halle a.S.

Stoffwechselversuche über den Eiweissbedarf des Kindes. Von Dr. med. et phil. Hans Lungwitz, Berlin. Price M. 1.80.

ORTHOS PRESS, THE, 21, John-street, Bedford-row, London, W.C.
The Eye, its Elementary Anatomy, Physiology, and Optical Constants. By Lionel Laurance. Price not stated.

OWEN, A., AND Co., 28, Regent-street, London, W.
Health Knowledge. For Preventing the Approach of Disease. By Horatio K. Bromhead, F.R.I.B.A., I.A., Glasgow. Price 1s.

ROUSSET, JULES, 1, Rue Casimir-Delavigne et 12, Rue Monsieur-le-Prince, Paris.
Les Érythèmes Graves (Syndrome Erythémateux), Principalement au Cours de la Fièvre Typhoïde. Par le Dr. Marcel Poisot, Ancien Interne des Hôpitaux de Paris, Lauréat de l'Assistance Publique (Prix Barbier, Godard et Dusol, 1904), Licencié ès-Sciences Naturelles. Price not stated.

ROYAL UNIVERSITY OF IRELAND, Dublin. (LONGMANS, GREEN, AND Co., London.)
The Royal University of Ireland. The Calendar for the Year 1908. Price not stated.

SAUNDERS (W. B.) COMPANY, Philadelphia and London.
Practice of Medicine for Nurses. By George Howard Hoxie, A.M., M.D., Professor of Internal Medicine in the University of Kansas; Superintendent of the Eleanor Taylor Bell Memorial Hospital, Kansas City. With a Chapter on The Technic of Nursing. By Pearl L. Laptad, Principal of the Training School for Nurses of the University of Kansas. Price 6s. 6d. net.

SIMPKIN, MARSHALL, HAMILTON, KENT, AND Co., LIMITED, London.
The Cure of "Bad Throats" by Good Breathing: A Plea for Nature in Therapeutics. By Eric Robertson, M.A. Edin., Fellow of the Punjab University, Formerly Acting Principal of the Government College, Lahore. Price 2s. net.

WRIGHT, JOHN, AND Co., Bristol. (SIMPKIN, MARSHALL, HAMILTON, KENT, AND Co., LIMITED, London.)
Our Baby: For Mothers and Nurses. By Mrs. J. Laugton [Hewer, Certified Midwife; late Hospital Ward Sister. Eleventh edition. 60th thousand. Price, paper, 1s. 6d.; cloth, 2s. 6d.

Appointments.

Successful applicants for Vacancies, Secretaries of Public Institutions, and others possessing information suitable for this column, are invited to forward to THE LANCET *Office, directed to the Sub-Editor, not later than 9 o'clock on the Thursday morning of each week, such information for gratuitous publication.*

BARWELL, HAROLD, M.B. Lond., F.R.C.S. Eng., has been appointed Surgeon to the Throat, Nose, and Ear Department of the Amalgamated Hampstead General and North-West London Hospitals.

BOAG, F. L., M.B., Ch.B. Vict., has been appointed House Surgeon at St. Mary's Hospital, Manchester.

BRINDLEY, ALBERT E., M.D. Lond., D.P.H. Vict., has been appointed Medical Officer of Health of Derby.

COLLINS, Sir WILLIAM J., M.D., M.S. Lond., F.R.C.S. Eng., has been appointed Senior Ophthalmic Surgeon to the Amalgamated Hampstead General and North-West London Hospitals.

COOK, R. HALDANE, M.D. Aberd., has been appointed Medical Superintendent of the Enfield and Edmonton Joint Hospital Board Isolation Hospital, World's End, Winchmore Hill.

COURT, A. C., M.B., Ch.B. Edin., has been appointed House Surgeon at St. Mary's Hospital, Manchester.

DORE, S. ERNEST, M.B. Cantab., M.R.C.P. Lond., has been appointed Physician to the Skin Department of the Amalgamated Hampstead General and North-West London Hospitals.

DOUBLEDAY, F. N., L.D.S. Eng., has been appointed Dental House Surgeon at Guy's Hospital.

GAYTON, F. C., M.D. Aberd., has been appointed Medical Superintendent at the Surrey County Council's Asylum at Netherne, near Redhill.

HOWELL, C. M. HINDS, M.B., Ch.B. Oxon., has been appointed Physician to the Great Northern Central Hospital.

KINGSFORD, LESLIE, M.D. Edin., D.P.H., has been appointed School Medical Officer in the Department of the Medical Officer to the Education Authority of the City of Liverpool.

OLIVER, W. GRANT, L.D.S. Eng., has been appointed Dental House Surgeon at Guy's Hospital.

PEARCE, GEORGE HARPER, D.P.H. Camb., has been appointed a Medical Inspector to the County Council of the West Riding of Yorkshire.

SOLOMAN, E. E., L.D.S. Eng., has been appointed Dental House Surgeon at Guy's Hospital.

TAYLOR, FRANK E., M.D. Lond., M.R.C.P. Lond., F.R.C.S. Eng., has been appointed Gynæcologist to the Amalgamated Hampstead General and North-West London Hospitals.

WHITE, C. F. O., M.R.C.S., L.R.C.P. Lond., has been appointed House Surgeon fo the Hertford General Infirmary, Herts.

WILLIAMS, RALPH PAUL, M.D., B.S. Lond., D.P.H. Oxon., has been appointed Professor of Public Health in the University of Sheffield.

Vacancies.

For further information regarding each vacancy reference should be made to the advertisement (see Index).

BRISTOL ROYAL INFIRMARY.—Resident Junior House Surgeon and Resident Casualty Officer, each for six months. Salaries at rate of £50 per annum, with board, lodging, and washing.

BURTON-ON-TRENT INFIRMARY.—House Surgeon. Salary £120 per annum, with rooms, board, &c.

BUXTON, DERBYSHIRE, DEVONSHIRE HOSPITAL.—Assistant House Surgeon. Salary £70 per annum, with apartments, board, and laundry.

CANTERBURY, KENT AND CANTERBURY HOSPITAL.—House Surgeon unmarried. Salary £90 per annum, with board and lodging.

CITY OF LONDON HOSPITAL FOR DISEASES OF THE CHEST, Victoria Park, E.—House Physician for six months. Salary at rate of £50 per annum, with board, lodging, and washing.

CROOKSTON, NEAR PAISLEY, GOVAN DISTRICT ASYLUM.—Second Assistant Medical Officer, unmarried. Salary £150 per annum, with rooms, board, laundry, and attendance.

DEVON COUNTY COUNCIL.—Medical Officer of Health. Salary £600 per annum and expenses.

DEVONPORT, ROYAL ALBERT HOSPITAL AND EYE INFIRMARY.—Assistant Resident Medical Officer, unmarried, for six months. Salary at rate of £50 per annum, with board, lodging, and laundry.

EXETER, WONFORD HOUSE HOSPITAL FOR THE INSANE.—Assistant Medical Officer. Salary £200, rising to £250 per annum, with board, &c.

HARRIS PARISH.—Medical Officer. Salary £126 and house.

HASTINGS, ST. LEONARDS, AND EAST SUSSEX HOSPITAL.—Assistant House Surgeon for six months. Salary £20, with residence, board, and washing.

ISLE OF ELY EDUCATION COMMITTEE.—Medical Inspector of School Children. Salary at rate of £250 per annum.

LAMBETH WORKHOUSE AND INFIRMARY, Lambeth, S.E.—Assistant Medical Officer. Salary £150 per annum, with board, apartments, and washing.

LONDON THROAT HOSPITAL, 204, Great Portland-street, W.—House Surgeon, non-resident, for six months. Salary at rate of £50 per annum.

LOUGHBOROUGH AND DISTRICT GENERAL HOSPITAL AND DISPENSARY.—Resident House Surgeon. Salary £100 per annum, with rooms, attendance, board, and washing.

MAIDSTONE, WEST KENT GENERAL HOSPITAL.—Assistant House Surgeon, unmarried. Salary £60 per annum, with board and lodging.

MOUNT VERNON HOSPITAL FOR CONSUMPTION AND DISEASES OF THE CHEST, Hampstead.—Junior Resident Medical Officer. Salary £50 per annum, with board and lodging.

NEWPORT AND MONMOUTHSHIRE HOSPITAL.—Third Resident Medical Officer. Salary £60 per annum, with board, residence, and laundry.

NEWPORT (MON.) COUNTY BOROUGH.—Medical Inspector of Schools and Assistant Medical Officer of Health. Salary £250 per annum.

NORTHAMPTONSHIRE COUNTY COUNCIL EDUCATION COMMITTEE.—School Medical Officer. Salary £350, rising to £400 per annum, and travelling expenses.

ORKNEY, PARISH OF ROUSAY AND EGILSHAY.—Resident Medical Officer. Salary £51 per annum.

OXFORD, RADCLIFFE INFIRMARY AND COUNTY HOSPITAL.—Junior House Surgeon, unmarried. Salary at rate of £40 per annum, with board, &c.

ROYAL HALIFAX INFIRMARY.—Third House Surgeon, unmarried. Salary £80 per annum, with residence, board, and washing.

ST. GILES, CAMBERWELL, INFIRMARY, Brunswick-square, Camberwell.—Assistant Medical Officer. Salary £120 per annum, with apartments, board, and washing.

SOUTHWARK UNION INFIRMARY, East Dulwich Grove, S.E.—Assistant Medical Officer. Salary £100 per annum, with board, lodging, and washing.

STOKE-ON-TRENT, NORTH STAFFORDSHIRE INFIRMARY AND EYE HOSPITAL, Hartshill.—Junior House Surgeon. Salary £50 per annum, with board, apartments, and washing.

STRAND UNION WORKHOUSE, Silver-street, Edmonton.—Medical Officer. Salary £160 per annum.

TAUNTON, SOMERSET AND BATH ASYLUM, Cotford.—Assistant Medical Officer, unmarried. Salary £140 per annum, with apartments, board, &c.

TEIGNMOUTH HOSPITAL, SOUTH DEVON.—House Surgeon. Salary £70 per annum, with board, lodging, and washing.

WAKEFIELD, WEST RIDING OF YORKSHIRE COUNTY COUNCIL.—Assistant Medical Officer. Salary £300 per annum.

WALLASEY DISPENSARY AND VICTORIA CENTRAL HOSPITAL.—House Surgeon, unmarried. Salary £100 per annum, with apartments, board, and service.

WANDSWORTH UNION INFIRMARY, St. John's-hill, near Clapham Junction.—Junior Assistant Medical Officer, unmarried, for six months. Salary at rate of £120 per annum, with board, lodging, and washing.

WEST HAM UNION INFIRMARY, Whipps Cross-road, Leytonstone, N.E.—Junior Assistant Medical Officer (female). Salary £100 per annum, with residential allowances.

WEST LONDON HOSPITAL, Hammersmith-road, W.—Two House Physicians and Three House Surgeons for six months. Board, lodging, and laundry allowance provided.

WORCESTERSHIRE, BARNSLEY HALL ASYLUM, Bromsgrove.—Second Assistant Medical Officer. Salary £150 per annum, with quarters, board, washing, and attendance.

Births, Marriages, and Deaths.

BIRTHS.

CARD.—On July 30th, at Muswell-rise, the wife of Alfred H. Card, M.R.C.S., L.R.C.P., of a son.

ROWELL.—On July 31st, at Cavendish-place, W., the wife of George Rowell, F.R.C.S., of a son.

MARRIAGES.

MOORE—SMITH.—On August 5th, at St. Mary's Church, Newport, Fifeshire, Harold Ettrick Moore, M.B., Ch.B., of Bollington, Cheshire, to Elizabeth Marie Smith, second daughter of Mrs. Smith, Taygrove, Newport.

DEATHS.

DUDFIELD.—On July 30th, at Ealing, Thomas Orme Dudfield, M.D., Medical Officer of Health of the Royal Borough of Kensington, aged 75 years.

N.B.—A fee of 5s. is charged for the insertion of Notices of Births, Marriages, and Deaths.

Notes, Short Comments, and Answers to Correspondents.

THE DENTIST, THE ANÆSTHETIST, AND THE GENERAL PRACTITIONER.

To the Editor of THE LANCET.

SIR,—I should be glad if you will be good enough to give me your opinion of the ethical aspect of the following case and submit same for expressions from your readers.

I sent a patient (whom I have attended for 21 years) for teeth extraction to a local dentist with the message (duly delivered) that after examination he should communicate with me to make an appointment in order that I should administer gas. While my patient was with him he telephoned and said he purposed taking out the teeth but he *always* had a "specialist." I demurred and said it was an absurdity and that I was accustomed to give my patients the anæsthetic when required. I may say my patient was puzzled and annoyed over this and emphatically desired my presence. At the moment I consented, but in the evening I called upon my patient and explained after consideration that I must decline being with her. I could see no reason why she should be mulcted for two fees for so trifling an operation, and I could not submit to an insult which may not have been intended as personal but was a slur on the whole profession.

I wrote to the dentist explaining the situation from my point of view, telling him I regarded it as though he had sent me a patient for medical attendance, and finding dental work necessary I had sent him to a strange dentist. Evidently he must have known there was something wrong in his procedure, as our letters crossed and his was written in a semi-apologetic strain, explaining his custom of *always* calling in this particular "specialist," but as the family doctor's presence was often requested he very considerately allowed the same. Imagine two medical men required to witness the extraction of a tooth. What a luxurious age! "Extraction de luxe."

I may add that on receipt of my letter they both communicated with me by telephone, the dentist expressing regret but saying he could see no harm, also that the "specialist" was not keen on giving the anæsthetic (I am using his own words) would I do so; the "specialist" also asking would I administer, and very kindly asked me what my experience in continuous gas was, an impertinence scarcely to be believed. Needless to say I declined.

I desire to know whether the conduct of the dentist was not most unprofessional, and was not the anæsthetist, with the full knowledge of the facts of the case, equally unprofessional in his conduct? From the dentist's letter to me this has been done by him many times.

I very much regret that I allowed my patient to submit herself to the extraction by the said dentist. Should such a thing ever happen to me again I would not for a moment hesitate but would take the patient to another man.

It is to be hoped that this will prove an object lesson to the general practitioner and that he will take care to discriminate between the dentist who *always* desires the "specialist" and the one who acts as befits his position as a member of a worthy profession.

I am taking this up entirely in the interest of the general practitioner. A greater anomaly than the position taken up by the dentist in this case towards the profession would be most difficult to conceive. Either this must be stopped or I fear things will gradually become worse, and little will be left for the general practitioner. Thanking you in anticipation for your giving publicity to this,

I am, Sir, yours faithfully,

August 1st, 1908. G. P.

*** The patient's wishes in the matter must be paramount. The attitude of the dentist was unfortunate, but the providing of anæsthesia is left so often by the practitioner in the hands of the operator that no doubt the dentist in this case did not see that to follow the procedure which is usually convenient would be to put a distinct slur upon the general practitioner.—ED. L.

A CANCER EXHIBITION AT BRUSSELS.

IN THE LANCET of Sept. 28th, 1907 (p. 909), we announced under the above title an exhibition which will take place in Brussels in connexion with the Second Congress of the Société Internationale de Chirurgie which will be held from Sept. 21st to 25th, 1908. We have now received from the Secretary-General, Professor Dr. Depage, 75, Avenue Louise, Brussels, five papers printed in pamphlet form which will be read before the Congress. Their titles and authors are as follows: Ueber die Behandlung des Lippenkrebses, von Ilj. von Bonsdorff (Helsingfors), a.o. Professor der Chirurgie an der Universität Helsingfors; Report on Cancer of the Mouth and Tongue, by J. Collins Warren, M.D., Boston, Mass., U.S.A.; Traitement du Cancer de l'Appareil Urinaire et des Organes Génitaux de l'Homme, par le Dr. Félix Legueu (Paris), Chirurgien de l'Hôpital Tenon; Traitement du Cancer des Organes Génitaux chez la Femme, par le Dr. J. L. Faure (Paris), Chirurgien de l'Hôpital Cochin; and Treatment of Cancer by Radiotherapy and by Radium, by James H. Sequeira, M.D. Lond., F.R.C.P. Lond., F.R.C.S. Eng., Physician to the Skin Department and Lecturer on Dermatology at the London Hospital. At the end of each pamphlet is a *résumé* in English, French, and German (the three official languages of the Congress) prepared by the secretary. An international exhibition of instruments and surgical apparatus, including exhibits of cancer, will be held in rooms adjacent to the Salles des Séances at the Palais du Cinquantenaire at Brussels. The meetings will be public but the cancer exhibition will be confined to those approved by the delegates of the various countries.

THE REMUNERATION OF VACCINATION OFFICERS.

AT a meeting of the Cirencester board of guardians held on July 28th a letter was received from the Local Government Board in reply to the application of the guardians for permission to increase the salary of the vaccination officers owing to the effect of the new Vaccination Act in decreasing their salaries. The Local Government Board stated that it would be preferable until the effects of the Act could be better gauged to grant gratuities to the officers.

WORTHING HOSPITAL EXTENSION.

THE special fund promoted to complete the purchase of the additional land acquired for the hospital at Worthing has just been closed. A total sum of £2021 13*s.* 9*d.* was raised. The expenses only totalled £18 19*s.* 1*d.*, leaving £2002 14*s.* 8*d.* to be paid over. The amount has been handed over to the president of the institution, Sir Henry Aubrey-Fletcher. The fund was inaugurated by the mayor of the borough (Alderman F. C. Linfield) and the success which has attended his efforts will be marked as a feature of his mayoral activity. The hospital is doing an excellent work and merits any further financial support that may be accorded it.

TREATMENT OF STAMMERING.

ONE branch of the work of the Manchester education committee is the treatment best suited for the children afflicted with the defect of stammering. The medical officer to the committee, Dr. A. Brown Ritchie, says the result of last year's work has been eminently satisfactory. There are special classes for these children who are examined by Dr. Ritchie or an assistant medical officer. They are examined again at the termination of the courses of treatment, and great improvement is found in almost every case. Sometimes the course of instruction has to be repeated and now and then cases are met with where a perfect cure can scarcely be expected.

M.B. Edin.—The appearance of such puffs in the lay press is most unfortunate, but the medical man is not usually responsible for them. The persons who have been punished have had the advertisements traced to them, or the General Medical Council have had evidence before them influencing the decision. In this particular case the physician in question is a very well-known public man. His face has appeared in many papers. The article in no way suggests that the public ought to consult him. He is clearly not responsible for a line of the advertisement, and to our mind has a legitimate grievance against the advertisers.

X.—We do not know of any recent work that may be considered better worth consulting than others on the particular subject. Dr. C. A. Mercier's text-book on "Insanity" and Dr. T. S. Clouston's "The Hygiene of Mind" might be consulted in the first instance.

Adenoid.—We know the contents of the remedy, but we are not aware that any recent communications from medical men concerning it have been published. We understand that in certain cases its use has been followed by a distinct relief of symptoms.

COMMUNICATIONS not noticed in our present issue will receive attention in our next.

METEOROLOGICAL READINGS.

(Taken daily at 8.30 a.m. by Steward's Instruments.)

THE LANCET Office, August 6th, 1908.

Date.	Barometer reduced to Sea Level and 32° F.	Direction of Wind.	Rainfall.	Solar Radio in Vacuo.	Maximum Temp. Shade.	Min. Temp.	Wet Bulb.	Dry Bulb.	Remarks.
July 31	30·24	N.W.	...	125	74	65	62	66	Cloudy
Aug. 1	30·31	NNW	...	116	70	56	56	62	Fine
,, 2	30·29	N.E.	...	119	72	57	58	65	Fine
,, 3	30·33	N.W.	...	123	82	57	60	67	Fine
,, 4	30·21	N.W.	...	127	82	59	65	69	Cloudy
,, 5	29·82	N.W.	...	87	63	60	56	62	Cloudy
,, 6	29·96	N.E.	0·09	80	64	57	57	61	Cloudy

During the week marked copies of the following newspapers have been received:—*Sheffield Daily Telegraph, The Globe, Cardiff Mail, Glasgow Herald, Aberdeen Journal, Norwich Press, Edinburgh Evening Dispatch, Scotsman, Bradford Observer, Leeds Mercury, Sheffield Independent, Yorkshire Herald, Daily Telegraph, Bradford Argus, York Herald, Glasgow Evening Times, Glasgow Evening Citizen, Belfast Whig, Dundee Advertiser, Boston Guardian, Stratford-upon-Avon Herald, Norwich Mercury, Leicester Advertiser, Aberdeen Express, Edinburgh Evening News, Manchester Guardian, Liverpool Post, Westminster Gazette, Standard, &c.*

Medical Diary for the ensuing Week.

LECTURES, ADDRESSES, DEMONSTRATIONS, &c.

POST-GRADUATE COLLEGE, West London Hospital, Hammersmith road, W.

MONDAY.—2 P.M., Medical and Surgical Clinics. X Rays. Mr. Dunn: Diseases of the Eyes. 2.30 P.M., Operations.

TUESDAY.—10 A.M., Dr. Moullin: Gynæcological Operations. 2 P.M., Medical and Surgical Clinics. X Rays. Dr. Davis: Diseases of Throat, Nose, and Ear. 2.30 P.M., Operations. Dr. Abraham: Skin Diseases.

WEDNESDAY.—10 A.M., Dr. Saunders: Diseases of Children. Dr. Davis: Diseases of the Throat, Nose, and Ear. 2 P.M., Medical and Surgical Clinics. X Rays. Dr. Scott: Diseases of the Eyes. 2.30 P.M., Operations. Dr. Robinson: Diseases of Women.

THURSDAY.—2 P.M., Medical and Surgical Clinics. X Rays. Mr. Dunn: Diseases of the Eyes. 2.30 P.M., Operations.

FRIDAY.—10 A.M., Dr. Moullin: Gynæcological Operations. 2 P.M., Medical and Surgical Clinics. X Rays. Dr. Davis: Diseases of Throat, Nose, and Ear. 2.30 P.M., Operations. Dr. Abraham: Skin Diseases.

SATURDAY.—10 A.M., Dr. Saunders: Diseases of Children. Dr. Davis: Diseases of the Throat, Nose, and Ear. 2 P.M., Medical and Surgical Clinics. X Rays. Dr. Scott: Diseases of the Eyes. 2.30 P.M., Operations. Dr. Robinson: Diseases of Women.

OPERATIONS.

METROPOLITAN HOSPITALS.

MONDAY (10th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), St. George's (2 P.M.), St. Mary's (2.30 P.M.), Middlesex (1.30 P.M.), Westminster (2 P.M.), Chelsea (2 P.M.), Samaritan (Gynæcological, by Physicians, 2 P.M.), Soho-square (2 P.M.), City Orthopædic (4 P.M.), Gt. Northern Central (2.30 P.M.), West London (2.30 P.M.), London Throat (9.30 A.M.), Royal Free (2 P.M.), Guy's (1.30 P.M.), Children, Gt. Ormond-street (9 A.M.), St. Mark's (2.30 P.M.), West London (2.30 P.M.).

TUESDAY (11th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), Guy's (1.30 P.M.), Middlesex (1.30 P.M.), Westminster (2 P.M.), West London (2.30 P.M.), University College (2 P.M.), St. George's (1 P.M.), St. Mary's (1 P.M.), St. Mark's (2.30 P.M.), Cancer (2 P.M.), Metropolitan (2.30 P.M.), London Throat (9.30 A.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Throat, Golden-square (9.30 A.M.), Soho-square (2 P.M.), Chelsea (2 P.M.), Central London Throat and Ear (2 P.M.), Children, Gt. Ormond-street (9 A.M. and 2 P.M., Ophthalmic, 2 P.M.), Tottenham (2.30 P.M.).

WEDNESDAY (12th).—St. Bartholomew's (1.30 P.M.), University College (2 P.M.), Royal Free (2 P.M.), Middlesex (1.30 P.M.), Charing Cross (3 P.M.), St. Thomas's (2 P.M.), London (2 P.M.), King's College (2 P.M.), St. George's (Ophthalmic, 1 P.M.), St. Mary's (2 P.M.), National Orthopædic (10 A.M.), St. Peter's (2 P.M.), Samaritan 9.30 A.M. and 2.30 P.M.), Gt. Northern Central (2.30 P.M.), Westminster (2 P.M.), Metropolitan (2.30 P.M.), London Throat (9.30 A.M.), Cancer (2 P.M.), Throat, Golden-square (9.30 A.M.), Guy's (1.30 P.M.), Royal Ear (2 P.M.), Royal Orthopædic (3 P.M.), Children, Gt. Ormond-street (9 A.M. and 9.30 A.M., Dental, 2 P.M.), Tottenham (Ophthalmic, 2.30 P.M.), West London (2.30 P.M.).

THURSDAY (13th).—St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), University College (2 P.M.), Charing-cross (3 P.M.), St. George's (1 P.M.), London (2 P.M.), King's College (2 P.M.), Middlesex (1.30 P.M.), St. Mary's (2.30 P.M.), Soho-square (2 P.M.), North-West London (2 P.M.), Gt. Northern Central (Gynæcological, 2.30 P.M.), Metropolitan (2.30 P.M.), London Throat (9.30 A.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Throat, Golden-square (9.30 A.M.), Guy's (1.30 P.M.), Royal Orthopædic (9 A.M.), Royal Ear (2 P.M.), Children, Gt. Ormond-street (9 A.M. and 2 P.M.), Tottenham (Gynæcological, 2.30 P.M.), West London (2.30 P.M.).

FRIDAY (14th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), Guy's (1.30 P.M.), Middlesex (1.30 P.M.), Charing Cross (3 P.M.), St. George's (1 P.M.), King's College (2 P.M.), St. Mary's (2 P.M.), Ophthalmic (10 A.M.), Cancer (2 P.M.), Chelsea (2 P.M.), Gt. Northern Central (2.30 P.M.), West London (2.30 P.M.), London Throat (9.30 A.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Throat, Golden-square (9.30 A.M.), City Orthopædic (2.30 P.M.), Soho-square (2 P.M.) Central London Throat and Ear (2 P.M.), Children, Gt. Ormond-street (9 A.M., Aural, 2 P.M.), Tottenham (2.30 P.M.), St. Peter's (2 P.M.).

SATURDAY (15th).—Royal Free (9 A.M.), London (2 P.M.), Middlesex (1.30 P.M.), St. Thomas's (2 P.M.), University College (9.15 A.M.), Charing Cross (2 P.M.), St. George's (1 P.M.), St. Mary's (10 A.M.), Throat, Golden-square (9.30 A.M.), Guy's (1.30 P.M.), Children, Gt. Ormond-street (9 A.M. and 9.30 A.M.), West London (2.30 P.M.).

At the Royal Eye Hospital (2 P.M.), the Royal London Ophthalmic (10 A.M.), the Royal Westminster Ophthalmic (1.30 P.M.), and the Central London Ophthalmic Hospitals operations are performed daily.

EDITORIAL NOTICES.

IT is most important that communications relating to the Editorial business of THE LANCET should be addressed *exclusively* "TO THE EDITOR," and not in any case to any gentleman who may be supposed to be connected with the Editorial staff. It is urgently necessary that attention should be given to this notice.

It is especially requested that early intelligence of local events having a medical interest, or which it is desirable to bring under the notice of the profession, may be sent direct to this office.

Lectures, original articles, and reports should be written on one side of the paper only, AND WHEN ACCOMPANIED BY BLOCKS IT IS REQUESTED THAT THE NAME OF THE AUTHOR, AND IF POSSIBLE OF THE ARTICLE, SHOULD BE WRITTEN ON THE BLOCKS TO FACILITATE IDENTIFICATION.

Letters, whether intended for insertion or for private information, must be authenticated by the names and addresses of their writers—not necessarily for publication.

We cannot prescribe or recommend practitioners.

Local papers containing reports or news paragraphs should be marked and addressed "To the Sub-Editor."

Letters relating to the publication, sale and advertising departments of THE LANCET *should be addressed "To the Manager."*

We cannot undertake to return MSS. not used.

MANAGER'S NOTICES.

THE INDEX TO THE LANCET.

THE Index to Vol. I. of 1908, which was completed with the issue of June 27th, and the Title-page to the Volume, were given in THE LANCET of July 4th.

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VOLUMES for the first half of the year 1908 are now ready. Bound in cloth, gilt lettered, price 18*s.*, carriage extra.

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Y.—Dr. James Young, Clifton.

Z.—Zoological Society of London, Secretary of.

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